

No. 14626

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United States  
Court of Appeals  
For the Ninth Circuit.

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JESSE E. HALL, WEATHERFORD OIL TOOL COMPANY, INC., a Corporation; WEATHERFORD SPRING COMPANY OF VENEZUELA, C.A., a Corporation; HALL DEVELOPMENT COMPANY, C.A., a Corporation; WEATHERFORD, LTD., a Corporation; WEATHERFORD INTERNACIONAL, S.A., DE CV., a Corporation; NEVADA LEASEHOLD CORPORATION, a Corporation; PARKER INDUSTRIAL PRODUCTS, INC., a Corporation,

Appellants,

vs.

KENNETH A. WRIGHT and B & W, INC., a Corporation,

Appellees.

KENNETH A. WRIGHT and B & W, INC., a Corporation,

Appellants,

vs.

JESSE E. HALL, WEATHERFORD OIL TOOL COMPANY, INC., a Corporation, et al.,

Appellees,

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Transcript of Record  
In Nine Volumes

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Volume VI  
(Pages 2505 to 3016)

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Appeals from the United States District Court for the  
Southern District of California,  
Central Division.

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(Deposition of J. E. Hall, Sr.)

XQ.54: I hand you copy of another patent, Mr. [2647-284] Hall, being patent No. 2228229, granted January 7, 1941, on an application filed September 23, 1938, for casing protector applicator tool. I will ask you if you are the patentee of this patent? A. I am.

XQ.55: Was the application for this patent involved in any interference?

A. Not that I know of, because it has been fifteen years ago since I filed it.

Mr. Lyon: I will offer this patent, No. 2228229, in evidence as Petitioner's Exhibit 6B.

\* \* \*

XQ.56: I hand you copy of a further patent, Mr. Hall, it being patent No. 2200716, granted May 14, 1940, on an application filed June 27, 1938, and I will ask you if you are the patentee in this patent? A. I am.

XQ.57: Was this patent or the application upon which it was granted involved in any interference before the United States Patent Office?

A. I don't know, as it has been fifteen years since that application was filed. [2647-285]

Mr. Lyon: I will offer this patent, No. 2200716, in evidence as Petitioner's Exhibit 6C.

\* \* \*

XQ.58: I hand you copy of a further patent, No. 2196794, granted April 9, 1940, for stem jammed wedge valve, granted on an application filed May 19, 1939, and I will ask you if you are the patentee of this patent? A. I am.

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XQ.59: And was this patent or application upon which this patent was granted ever involved in an interference before the United States Patent Office?

A. I don't know, because it has been fourteen years since that was filed.

Mr. Lyon: I will ask that this application—I mean this patent—be marked in evidence as Petitioner's Exhibit 6D. By "this patent," I mean 2196794. [2647-286]

\* \* \*

Mr. Lyon: I hand you a copy of a further patent, Mr. Hall, No. 2196793, granted April 9, 1940, on an application filed on August 20, 1937, for fluid screen. I will ask you if you are the patentee of this patent? A. I am.

XQ.60: Was this patent involved in an interference, or was the application upon which it was granted involved in an interference before the United States Patent Office?

A. I don't recall, as it has been sixteen years since that application was filed.

Mr. Lyon: I will offer this copy of patent No. 2196793 in evidence as Petitioner's Exhibit 6E.

\* \* \*

XQ.61: I hand you a copy of a further patent, Mr. Hall, patent No. 2191380, granted February 20, 1940, on an application filed January 13, 1937, for well pump. I will ask you if you are the patentee in this patent? A. I am.

XQ.62: Was that patent or the application upon

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which the patent was granted ever involved in an interference before the Patent Office? [2647-287]

A. As this has been a number of years ago, I don't recall the prosecution of that application.

Mr. Lyon: I will offer this copy of patent No. 2191380 in evidence as Petitioner's Exhibit 6F.

\* \* \*

XQ.63: I hand you copy of a further letters patent No. 2138002, granted November 29, 1938, for well pump, on an application filed March 23, 1936. I will ask you if you are the patentee in this patent? A. I am.

XQ.64: I will ask you if this patent or the application upon which it was granted was ever involved in an interference before the United States Patent Office?

A. I don't know, as that has been seventeen years since this was filed.

Mr. Lyon: I will offer this copy in evidence as Exhibit 6G. [2647-288]

\* \* \*

XQ.65: I hand you a soft copy of letters patent No. 2132161, granted October 4, 1938, for insertable circulation starter for a well string granted upon an application filed August 24, 1936. I will ask you if you are the patentee of this patent?

A. I am.

XQ.66: Was this patent or the application upon which it was granted ever involved in an interfer-

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ence proceeding before the United States Patent Office?

A. I don't recall. It has been seventeen years since this has been filed.

Mr. Lyon: I will offer this copy of this patent, No. 2132161, in evidence as Exhibit 6H.

\* \* \*

XQ.67: I hand you copy of another letters patent, Mr. Hall, being patent No. 2126992, granted August 16, 1938, for pump jack on an application filed July 18, 1936, and I will ask you if you are the patentee of this letters patent? A. I am.

XQ.68: Was this patent or the application upon which it was granted ever involved in an interference [2647-289] proceeding before the United States Patent Office?

A. That has been seventeen years ago, and I don't recall.

XQ.69: I will offer a copy of patent No. 2126992 in evidence as Petitioner's Exhibit 6I.

\* \* \*

XQ.70: I hand you copy of another letters patent, No. 2107788, granted February 8, 1938, on an application filed January 9, 1937, for deballing drilling bit. I will ask you if you are the patentee of this patent? A. I am.

XQ.71: Was that patent or the application upon which it was granted involved in an interference proceeding before the United States Patent Office?

A. It was not.

(Deposition of J. E. Hall, Sr.)

Mr. Lyon: I will offer the copy of the patent, No. 2107788, in evidence—— [2647-290]

\* \* \*

XQ.72: I hand you copy of another letters patent, Mr. Hall, this being patent No. 2392144, granted January 1, 1946, on an application filed May 29, 1943, for pipeline cleaners, and I will ask you if you are the patentee of this patent?

A. I am.

XQ.73: Was this patent or the application upon which it was granted involved in any interference before the United State Patent Office?

A. I don't recall. It has been ten years since this was filed.

Mr. Lyon: I will offer this soft copy of letters patent No. 2392144 in evidence——

\* \* \*

Mr. Lyon: At this time I will also offer in evidence as the Petitioner's exhibit next in order a certified copy of the file wrapper and contents in the matter of letters patent No. 2392144, Exhibit 6K, as Exhibit 6L. [2647-291]

\* \* \*

XQ.74: I hand you copy of a further patent, Mr. Hall, patent No. 2220237, of November 5, 1940, and I will ask you if you are the patentee of this patent? A. I am.

XQ.75: Was this patent involved, or the application upon which it was granted involved, in an

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interference before the United States Patent Office?

A. I believe I stated yesterday that patent was an interference.

XQ.76: In interference with whom?

A. Steps, et al., Hartman, something. I don't know who it was.

XQ.77: (By Mr. Scofield): Hartman?

A. Yes, I don't know the full name.

XQ.78 (By Mr. Lyon): Was that interference settled? [2647-292]

A. I couldn't tell you, Mr. Lyon, at this time how it was settled. It is of record, however. It was settled.

XQ.79: I didn't ask you how. I said was it settled? A. I suppose so.

XQ.80: Was there a claim of priority filed in that interference?

A. I don't recall what was done at this time.

XQ.81: You have no recollection?

A. No recollection, only I know there was an interference.

XQ.82: This particular patent is a patent, is it not, directed to your spiral centralizer?

A. Yes, that is directed to the old spiral centralizer and the new one, maybe.

XQ.83: And this patent is the one from which you derived your principal revenue for quite a number of years, isn't it?

A. Oh, I derived revenue from it. I am not

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supposed to tell you what I derive my principal revenue from. I haven't made no audit.

XQ.84: In 1939 were spiral centralizers being manufactured under this patent?

A. Mr. Lyon: I can't tell you that [2647-293] far back. That is all of record, what was being sold.

XQ.85: Was this one of the patents that was licensed to the Cosco Manufacturing Company?

A. That is the patent that was licensed to them.

XQ.86: And it was the Cosco centralizer made by that company under that license that was used in the Jones and Berdine tests, was it not?

A. That is correct.

XQ.87: At that time were you engaged in any other manufacturing business?

A. I am unable to answer that. I have been in a good many businesses, and I am not able to tell you what I was in at that time.

Mr. Lyon: I will offer in evidence as Petitioner's exhibit next in order the copy of the patent No. 2220237, as Petitioner's Exhibit 6M and ask that it be so marked.

\* \* \*

XQ.88: Now, in addition to that interference and the interferences that you have testified to with Mr. [2647-294] Wright, were you also involved in an interference with one Ford W. Harris on a patent application?

A. I don't know what that litigation was, that Ford W. Harris, but since you mentioned his name, I recall of some affair with him.

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XQ.89: Wasn't that an interference before the Patent Office in which you actually took testimony?

A. I don't recall the fool thing; I couldn't state at this time that that is of record. [2647-295]

\* \* \*

XQ.129: You stated that you helped—on direct examination—in the writing of this report. What part of it did you help in the writing of?

\* \* \*

A. If I have stated that, I would like to see that in the testimony.

XQ.130: Did you state that? [2647-304]

A. I give some discussion or some talk of what the centralizer did, but to sit down and write something wherein you hand anyone information—if you discussed anything, how it should be done, you would feel that you had a part in it, wouldn't you?

XQ.131: Whom did you have that discussion with? A. That I don't recall.

XQ.132: Mr. Jones or Mr. Berdine?

A. No, I never had it with Mr. Jones, I know, because I talked with several fellows, I talked with the men that stayed out there, different fellows, about the thing several times and stood around out there where these bickets were, and I don't know whether they taken any of my language down and put it in the report. I wouldn't say that.

XQ.133: You have read the report. Do you recognize any of your language in that report?

A. I recognize the very thing that is stated, I recognize the very thing that I realized that was



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coming out of the report before the report was made. I realized that they got a pretty good cement column out there and one thing and another, and the report came out, to my opinion about what it was. I would say that I had some part to play in it, but to put my finger on a specific word, I wouldn't do that. [2647-305]

\* \* \*

XQ.205: I am going to hand you a photostatic copy of a certificate of doing business by fictitious name, which is dated January 11, 1940, and which was [2647-320] filed with L. E. Lampton, County Clerk of Los Angeles County, State of California, on January 11, and ask you to look at the words Elmer D. Hall, signed to this on the 11th day of January, 1940, and I will ask you who signed that name?

A. I am going to answer this.

XQ.206: Just answer it. Tell us who signed it.

A. At the same time, I am going to ask you a question.

XQ.207: All right, but just answer it.

A. I signed this with permission. We had discussed it.

XQ.208: All right. Now at that time you stood up before a public official, Ida M. Murphy, and took an oath to the fact that you were Elmer Hall, did you not?

A. I don't recall that I did or not.

XQ.209: You don't recall that?

A. No, I don't. I don't recall that there was an

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oath made. If the document shows there was an oath made, there was one made.

Mr. Lyon: I will offer in evidence this photostatic copy of this certificate of doing business, filed January 11, 1940, with the county clerk of Los Angeles County, as Petitioner's exhibit next in order.

The Witness: At this time—— [2647-321]

XQ.210: You don't need any statement. You will have an opportunity on redirect examination to make any statement you want to. [2647-322]

\* \* \*

XQ.253: How long prior to November 6, 1945, have you been manufacturing an inside-stud type scratcher? A. Ask that over again.

Mr. Lyon: Just read the question.

(The reporter read the question.)

A. At this moment I couldn't tell you.

XQ.254: Were you manufacturing an inside-stud type scratcher in 1941?

A. I think we produced docutory evidence that I were.

XQ.255: In fact, the July 7, 1941, advertisement, Exhibit Z, shows an inside-stud scratcher, does it not? A. That is correct.

XQ.256: You were manufacturing, offering that scratcher [2647-329] for sale, at that time, weren't you?

A. That is what the ad says, offering it for sale.

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XQ.257: Does your application Serial No. 388891 show an inside-stud-mounted scratcher?

A. It does not.

XQ.258: Does your application Serial No. 388891, the first application, show the close tolerance type scratcher?

A. Well, I am not able to answer that.

XQ.259: How long before November 6 of 1945 were you, as Weatherford Spring Company, manufacturing and selling close tolerance type scratchers? A. Read me that question.

(The reporter read the question.)

A. I would have to refresh my memory from some letters that we had here, to the dates.

XQ.260: All right. Go right ahead and do that.

XQ.261 (By Mr. Scofield): What letter do you want?

A. Letters wrote backwards and forwards to John, and talk to friends, and just agreeing to handle them, and we would have some in stock.

Mr. Lyon: 50, 51 and 52, I believe.

Mr. Scofield: Give him the date, and it will save trouble. [2647-330]

Mr. Lyon: I don't know the date.

Mr. Scofield: Do you want me to give him the date?

Mr. Lyon: Give him the letters. That is what he asked for.

Mr. Scofield: Attempting to save a little time, is all.

The Witness: He has got plenty of time. He is

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drawing money for it. It doesn't make any difference to him, and I can tough it out, myself.

Mr. Lyon: The witness has asked for some documents, and I am not asking to have him instructed as to what his testimony should be.

XQ.262 (By Mr. Lyon): Now, you have asked for some letters that have been handed to you, Exhibits 50, 51 and 52. Do these tell you when you first manufactured and sold the close tolerance scratcher?

A. No, they give the first information that any is being shipped that I have been able to find anything on the records.

XQ.263: Those letters tell you when the first ones were shipped, do they?

A. Yes, it tells the first ones was shipped, made and put in stock.

XQ.264: Made and put in stock [2647-331] where? A. Various places in the factory.

XQ.265: In the factory, or in retail outlets?

A. And also the retail outlets.

XQ.266: But they do establish when the close tolerance scratchers were placed in the retail outlets; is that what you mean?

A. As close as I can find, it was January 15, 1944.

XQ.267: Now, those first close tolerance scratchers had tapered coils in them, did they not?

A. Had what?

XQ.268: Tapered spring coils in them.

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A. No, they didn't have tapered spring coils. You mean the cone shaped coil?

XQ.269: How did they differ from Exhibit 49, if at all?

A. They didn't differ any at all from 49; that is a replica of them.

XQ.270: Did those original ones have one, two, three or four turns in the springs?

A. I believe I testified yesterday that they had around two coils. In reality, the radius takes off almost a half a coil; there is about one coil and three-quarters.

Mr. Lyon: Let the record show that the witness in [2647-332] answering the last question was making an inspection of the coils of Exhibit 49.

XQ.271: Now, were the turns of the wire in these first close tolerance scratchers so that each succeeding turn or a portion of a turn was of smaller diameter than the preceding turn?

A. They are.

XQ.272: And that was true of the first ones that were offered; is that correct?

A. That is true.

XQ. 273: Then it is apparent that you were selling and had placed on sale, at least as early as January 15, 1944, that close tolerance scratcher; is that correct?

A. I placed on sale at that date this scratcher that is here before us. [2647-333]

\* \* \*

XQ.322: You have testified on direct examina-

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tion that in their scratchers there is substantially no difference in the reversing principle of the scratcher, as long as that scratcher has coils, springs and a sidewise extension of the bristles; is that correct?

A. No, I haven't testified, I don't believe, to that. Read the question there. I want to get that right.

(The reporter read the question.)

A. No, that is not correct.

XQ.323: There is a difference? In what respect?

A. I specified that they must have a coil sufficient for the resilience to make the [2647-346] reflection.

XQ.324: Correcting my statement, then, if the coil has enough turns—that is what you mean——

A. Yes, I think I testified to that, if the coil had enough turns.

XQ.325: Then it doesn't make any difference in the reversing principle, the amount of sidewise inclination of the wires, as long as there is a sidewise inclination?

A. As long as you can get enough coils in there and the springs is at the right position. [2647-347]

\* \* \*

XQ.343: At the time you filed this application, serial No. 627013, and took the oath to that application, did you advise Mr. Scofield that you had been selling that scratcher since January 15, 1944?

A. I don't recall advising him that I was selling

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this scratcher. I advised him that I had developed a new scratcher.

XQ.344: Did you advise him that you had been selling the close tolerance scratcher since January 15, 1944?

A. I don't recall whether I advised him whether I was selling the close tolerance or not. [2647-350]

XQ.345: Did you advise Mr. Scofield prior to the filing of this application, 627013, that four years before that application was filed you had been selling a scratcher with the inside stud mounting?

A. I don't recall whether I advised him that I had been selling it four years prior. I imagine he knew it.

XQ.346: You think that he knew it?

A. Yes.

XQ.347: And your answer is also the same, that you think that he knew you had been selling a scratcher like Exhibit 49 since about January of 1944; is that true?

A. No, I am not able to state that. I don't know.

XQ.348: During the prosecution of your application, serial No. 627013, you were required to make an election of species, were you not, that is, elect what scratcher you wanted to claim in that application?

A. I don't recall that.

XQ.349: You don't recall that. Do you recall at any time discussing with your patent counsel as to which specie you should select as the one that you would claim in that application?

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A. I recall possibly pointing out what I was trying [2647-351] to develop in the way of a patent, and what the invention was.

XQ.350: Do you recall at any time pointing out to Mr. Scofield which of the forms of scratcher you would claim in that application? Can you answer that question? A. No, I can't.

\* \* \*

XQ.351: In the application, serial No. 627013, are there three forms of scratchers illustrated in the respective drawings? And I hand you Applicant's Exhibits 39B and C. A. 39B and C?

XQ.352: Yes. A. That is correct.

XQ.353: Those three forms are the forms illustrated, as follows, one form being illustrated under Figures 1 and 2, the second form being illustrated in Figure 3? A. That is correct.

XQ.354: And a third form being illustrated in [2647-352] Figures 4, 5 and 6?

A. That is correct. [2647-353]

\* \* \*

XQ.356: In the application, photostatic copy of which I will now ask be marked as Petitioner's Exhibit 6R, and I will offer it in evidence as that exhibit—by that exhibit number—I will call your attention to claim 1 of the application and to the latter part of that claim, which reads: "The whiskers projecting at an angle from the sleeve, simulating the trajectory of a body thrown from the sleeve, were the sleeve rotated rapidly," and I will



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ask you if you know where that definition came from?      A. No, I do not.

(The exhibit offered in evidence was marked by the reporter, Petitioner's Exhibit 6R.)

XQ.357: At the time the application was filed, did you read those words?

A. No, I don't believe I did; I don't recall it.

XQ.358: You don't have any recollection. Did you read the claims at all before you signed the application?

A. Possibly I did glance over them, [2647-355] but I don't understand all there is in the claim. Claims are rather hard to read, and I explain my invention to my attorney, and he works it out to try to get the best claims he can, so I don't know the terminology of it.

XQ.359: Haven't you for many years studied the claims of your applications, to be sure that you got the most out of them, as you stated yesterday?

A. Yes, we try to, we try to study them all, but part of the application, I never spent any time reading the claims.

XQ.360: After the application is on file, you go over the claims carefully with your attorney at all times, don't you?

A. No, I don't believe I hardly ever see the application any more.

XQ.361: You never see it any more?

A. Unless something arises that interests me to take it out, but there are many applications I have

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never looked at for several years after they have been prosecuted.

XQ.362: I hand you Petitioner's Exhibit 6L, and I will ask you if the scratcher shown in the drawings of the application—with the application—are the tangential scratcher?

A. That might be the scratcher that [2647-356] we have been talking about here. This scratcher here is inside of a pipe.

XQ.363: Just answer the question, please, and I will ask that the question be read to you and ask you to answer it. A. Read it to me, please.

(The reporter read the question.)

A. No, that is not a tangential scratcher, the true definition of tangential.

XQ.364: Why?

A. Because it is not a tangent.

XQ.365: You mean in this application of yours you do not show a tangential scratcher?

A. Not as later was defined as tangential. We used to broadly call them a tangent.

XQ.366: How was it later defined?

A. It was later defined by the Patent Office by Mr. Wright filing some protests to a tangent, and along at a later date, after we filed it and was calling it broadly a tangent, it was limited down, as I recall, to a true tangent.

XQ.367: And it is your statement right now that that definition of true tangential relationship came about as a part of some protest that Mr. Wright made to the Patent Office? [2647-357]

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A. Yes, in the Patent Office itself, and I remember——

XQ.368: Wait a minute. Was that with respect to this application Exhibit 6L, this pipe cleaner?

A. I don't recall nothing about this pipe cleaner.

XQ.369: Do you remember when that was, this protest that you are talking about Mr. Wright filing?

A. No, I don't know the date. It is of record. We could find it.

XQ.370: Was that after this 627013 application was filed? A. I don't know.

XQ.371: Was it during the prosecution of the 627013 application?

A. That I couldn't tell you.

Mr. Lyon: Was it?

Mr. Scofield: It is of record here; it has been offered.

The Witness: There is no use arguing about it.

XQ.372: All right, what was the date of it? If you are talking about a protest, let's fix the date.

Mr. Scofield: It is of record.

A. I would like to state, before that protest, Mr. Wright, my attorney, myself and everybody had talked [2647-358] about it, we were calling it a tangent, broadly, and we were limited down to it from this on, and we tried to hold to a true tangent.

\* \* \*

XQ.373: The record now shows that the protests which you were talking about is in evidence here as Applicant's Exhibit 55, dated July 28, 1949; is that the one which you were speaking about?

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A. Yes, sir. [2647-359]

XQ.374: I notice in this patent, Petitioner's Exhibit 6K, which is the patent, I believe, issued from the application which is in evidence as Exhibit 6L, that on page 2 of this patent it is stated: "Whiskers 18 are spring mounted and extend tangentially from collars 17." And I am reading on page 2, the first column, lines 15 and 16. Does that statement cause you to change your previous answer that the whiskers were not tangential, as shown in this patent?

A. The Patent Office defined it, has defined the statement that at this time I was using and considered using it as a tangent.

XQ.375: All right. Just answer the question. I will ask that the question be read.

(The reporter read the last preceding question.)

A. As shown in this patent here, I don't recall that as only a word of calling tangent, and at that time I understand we were all using "tangent." Anyway, that was substantially a sidewise bristle. We used it as a tangent; we hadn't been defined down to it.

XQ.376: The patent you were talking about in your last answer is the patent before you, Exhibit 6K; is that true? [2647-360]

A. That is correct.

XQ.377: Now, I will ask that the questions be read to you again, and you answer the question.

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(The reporter again read the question: I notice in this patent, Petitioner's Exhibit 6K, which is the patent, I believe, issued from the application which is in evidence as Exhibit 6L, that on page 2 of this patent it is stated: "Whiskers 18 are spring mounted and extend tangentially from collars 17." And I am reading on page 2, the first column, lines 15 and 16. Does that statement cause you to change your previous answer that the whiskers were not tangential, as shown in this patent?)

A. The whiskers in there, shown in that patent, wasn't a true tangent, not anywhere close to it.

XQ.378: Now, again in this patent, on page 2, Claim 1, the line 46 to 49, I find this statement: "The tangentially extending wire whiskers or scratcher units cause the swab to constantly rotate, thus assuring even wearing of the discs." I hand you the patent, so you can ascertain that what I read is correct. What did you mean by that statement in the patent? [2647-361]

A. Well, that I have explained to you as far as I know. That was a tangent, that was a word that my attorney was using to describe the sidewise bristle, and at this time it hadn't been defined to a true tangent.

XQ.379: At what time do you mean by "at this time"?

A. Somewhere in, I believe you said a while

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ago, 1949, that this protest was made and the Patent Office defined what a tangent was.

XQ.380: And as far as you know, the Patent Office didn't at any time earlier than that define what was a true tangent in any of your patent applications?

A. That I don't know. I haven't taken the progress of the applications, and I couldn't tell you.

XQ.381: Were you present in Washington, D. C., at a time when there was an interview had with the Patent Office Examiner handling the application of this, which resulted in the issue of the patent, Applicant's Exhibit 6K?

A. Do you mean at a conference over this patent?

XQ.382: Yes.           A. No.

XQ.383: To your knowledge, was any such conference ever had? [2647-362]

A. There could have been a conference, but I never had a conference over this patent here.

XQ.384: Now, have you got copies of the actions and the amendments which were filed in your applications?

A. Part of the time, and part of the time I don't.

XQ.385: Why part of the time?

A. Well, I just didn't get them all; I don't have all of them.

XQ.386: You endeavor to get all of them, don't you?

A. No, I never pay much attention to Patent Office actions.

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XQ.387: As far as you know, then, you were not present at the Patent Office on an interview had with the Patent Office Examiner——

A. As far as I know.

XQ.388: Wait a minute, wait a minute, wait a minute until I finish with it. A. All right.

Mr. Scofield: The witness already answered the question. If there is something else in the file, you may show him the file which you have before you. This is all recollection back prior to January 1, 1946.

XQ.389: An interview was had with the examiner just prior to June 19, 1945, just prior to June 16, [2647-363] 1945, at which time the Examiner stated that “tangentially” as a definition for such wires was indefinite, and suggested that such definitions should be to define that the wires extend from the body in a manner simulating substantially the trajectory of objects thrown from the surface of the body, were the body rotated?

\* \* \*

XQ.390: Just answer the question, will you please?

A. I cannot answer it, because I don't remember it.

XQ.391: You have no recollection?

A. I have no recollection. [2647-364]

XQ.392: I will read you a portion of the amendment, dated Kansas City, Missouri, June 16, 1945, and signed by Thomas E. Scofield, and I am read-

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ing from page 34 of Exhibit 6L, and ask you if this in any way refreshes your recollection:

“The cancellation of Claims 12 and 13 eliminates the rejected claims. Claims 14 and 15 were drafted and submitted at a personal interview with the Examiner in charge of the case and the Primary Examiner kindly accorded applicant’s attorney. At the interview the Examiner’s suggestion contained in the last Office letter regarding the manner of claiming the whiskers was discussed. It was agreed that the terminology ‘extending tangentially in one direction’ lacked accuracy, and for that reason the extension of the whiskers ‘from substantially the trajectory of objects thrown’ from the body if rotated, was agreed upon. Certainly this is descriptive of the manner in which the whiskers extend from the body and clearly differentiates the invention from the Black, et al., patent, where the whiskers extend radially from the body.”

Does that refresh your recollection?

A. No. [2647-365]

\* \* \*

XQ.393: You have no recollection at all, then, that this proposition of tangential relationship was fixed in the Patent Office in your application as early as June 16, 1945?

A. No, I have no recollection at all.

XQ.394: Now, does this fixing this definition change in any way your testimony that the patent, Applicant’s Exhibit 6K, does not show a tangential form of scratcher?

\* \* \*



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A. My statement is that this doesn't show a tangential scratcher.

XQ.395: And that is still your statement?

A. That is still my statement.

XQ.396: I hand you patent numbered 220237, Petitioner's Exhibit 6M, and I will ask you if you understand in connection with this patent what the word "tangential twist" means?

Mr. Scofield: Where does it appear? [2647-366]

Mr. Lyon: I didn't say it appeared. I asked him if in connection with this patent he would understand what the word "tangential twist" means.

A. I don't believe I would at this point.

XQ.397: Is there a tangential twist in the bows forming the springs of the centralizer shown in this patent? A. I don't believe so.

XQ.398: You don't believe so?

A. No. It certainly wasn't intended to be.

XQ.399: What does the expression mean found in Column 1, page 3 of Exhibit 6M, second column, lines 15 to 62, wherein I will read:

"Said members being twisted both helically and tangentially as to the casing, to each present a helical, out-bowed leading edge for scraping the wall of a well bore"?

Mr. Scofield: Read him the phraseology.

(The reporter read the portion of the foregoing question containing the quotation from the patent.)

XQ.400: That is in Claim 1, Mr. Hall, if you want to read it.

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A. I don't know what it would mean. It looks to me like the attorney's language here. If he [2647-367] was going to explain a helical out-bowed twist, it looks like that would show in the drawing itself.

XQ.401: Where is that helical out-bowed twist shown in the drawings of this patent? Can you find it?

A. It would be the out-bow twist here. That is what I would take it to be.

Mr. Scofield: Pointing to Figure 2.

XQ.402: You pointed to the point which I will mark H in the drawing——

A. That is correct.

XQ.403: ——of Exhibit 6M. Is that correct?

A. Correct.

XQ.404: Now, in what manner is the word "tangential" used there? Do you know?

A. It is used there, I suppose, the same broad term that was used in the broad term the attorneys used, trying to describe the scratcher finger.

XQ.405: Does that mean a twist in the direction or a tangent?

A. It looks to me like the part there would be a twist away from the tangent.

XQ.406: Well, what is its relation to a tangent?

A. The end where it is fastened on the collar would be a relation to a tangent.

XQ.407: Doesn't that refer to a twist at the point [2647-368] where it is fastened to the collar in a tangential direction?

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A. At the point where it is fastened to the collar would be a tangent.

XQ.408: And it is at that point that the tangential twist is given to the bow, isn't it?

A. No, I don't believe so.

XQ.409: Where is it then?

A. I don't know. That has always been a problem to me. I have heard it discussed pro and con.

XQ.410: You just don't understand this patent of yours, you mean?

A. I don't understand that particular phase of it.

XQ.411: You don't understand what "tangential twist" means at all?

A. Broadly I understand.

XQ.412: All right. Where the patent claim says "twisted tangentially," you don't understand?

A. No, I don't believe you could call it tangentially. That would be a wrong phase. If it wasn't twisted at all, the spring would come nearer simulating a tangent.

XQ.413: It is twisted out of a tangent then; is that what you mean? [2647-369]

A. Yes, it is twisted out of tangent.

XQ.414: At the point where the bow connects with the collar?

A. Fastened on it, I presume you mean, I would call it twisted out of tangent.

XQ.415: At the point where the wire is attached to the collar; is that right?

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A. That is where it is in a closer tangent than any other time.

XQ.416: And it would be twisted out of the tangential relationship, as you understand it, at that point of connection?

A. No, no. It is in, it is tangent at that time, and before you twisted it out——

XQ.417: What does “twisted helically” mean to you? A. Helical, it would be——

XQ.418: Like a screw thread?

A. Like a screw thread.

XQ.419: And twisted tangentially is something different from twisted in a screw thread, isn't it?

A. Well, I think if you twisted it tangentially, you would have to twist it in relation to something else.

XQ.420: That is right. Now, in Figure 4 of this Exhibit 6M, isn't the twist that is referred to as a [2647-370] helical twist indicated just above the No. 11 with the arrow on it there?

A. I couldn't tell you, Mr. Lyon; I am not an examiner of patents.

XQ.421: Well, is there a twist at that point of the bow?

Mr. Scofield: Referring to Fig. 4?

XQ.422: Yes, just above the numeral eleven.

A. Now, what are you asking me?

XQ.423: Is there a twist in the bow that is above the numeral eleven that has the arrow?

A. I would say at that point.

XQ.424: At that point is where the twist is?

A. It looks to me like it is in some type of twist.

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XQ.425: Is there any other twist of the patent, other than the helical twist, that can be referred to as a tangential twist?

A. No, that patent was written by your friend Bill Maxwell, and you probably can get better information out of him.

XQ.426: You mean what he says would be right?

A. No, I don't believe so. He may suit you better.

XQ.427: I didn't think you would stipulate to that. [2647-371] Referring back to Petitioner's Exhibit 6R, I will call your attention to the fact that in the first office action, Paper No. 4, dated January 31, 1947, that the Examiner says, "The requirement for election of species will be insisted upon, even though applicant may argue that all the claims are generic or have been amended to make them generic," and I will hand you Exhibit 6R and show you that statement. It is there. I have my finger laid on the whole statement. I will remove my finger so you can read it. You understand, do you not, Mr. Hall, that when there is a requirement for election in an application, that means you must point out in that application which form of your invention you want the Patent Office to give you a patent on? That is correct, isn't it?

A. No, I have always turned my patent over to my attorney, and he sits down the draftsman with me, and we draw it, and we point it out, and that part of the transaction I have never had nothing

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to do with it. I have never sat down and selected the point or species, or anything to do——

XQ.428: You know of such a thing as a requirement of division in your application, don't you?

A. I have heard of it at times.

XQ.429: You have heard of it a lot [2647-372] of times? A. A few times.

XQ.430: And where there is a requirement for division, you know that means you have got to decide which one of the forms of your application you want the patent to issue on, don't you?

A. I don't know whether you do or not. You give it to the attorney, and you ask him to get the best, broadest patent you can, and you sit down and talk about it, and come up with what you get, I guess.

XQ.431: You have said that you have heard of a requirement for a division before. Now just state in your own language, what is a requirement for division?

A. I don't know. Only a request is all I know.

XQ.432: A request for what?

A. Well, a request for a division; that is all I can tell you.

XQ.433: What does the word "division" mean?

A. To divide, to cut something in two.

XQ.434: Cut it in two with respect to different forms of your invention that are shown in the single application; isn't that right?

A. I imagine so.

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XQ.435: And you have imagined that for a long time, haven't you? [2647-373]

A. I have never attempted to make a division myself.

XQ.436: Just answer the question, please. I will ask that the question be read.

(The reporter read the question.)

A. Imagined what?

XQ.437: You have imagined that it meant to divide the application up and select one form of invention?

A. I think that is of record, and I think it would explain its ownself. I don't make the requirements of the Patent Office and the rules of them.

XQ.438: Did you, in response to that requirement of the Patent Office as I read you from paper No. 4, make an election as to which form of your invention you desired the patent to issue with relation to?

Mr. Scofield: I object to that as a compound question. I also object to the question as being secondary evidence, the file itself being the best evidence, of course.

Mr. Lyon: Maybe you are right that the file is the best evidence, and the file clearly shows an election of species, and the election made.

Mr. Scofield: It is in evidence. You can argue from that. I see no reason to go through all this with the witness. [2647-374]

Mr. Lyon: Where is Exhibit 49?

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Mr. Scofield: You want the scratcher?

Mr. Lyon: Yes.

(The exhibit is produced.)

XQ.439: Would you say, Mr. Hall, that this scratcher includes the wires and each wire having a coil which is formed somewhere between the ends of the wire?      A. Yes.

XQ.440: And would you say that if you cut through one of those coils that you would have a taper or conical coil?      A. No.

XQ.441: Why not?

A. You just wouldn't have it,

XQ.442: Why?      A. It just ain't there.

XQ.443: Why is it not?

A. You tell me why it is.

Mr. Scofield: I object to that as argument.

XQ.444: I call your attention to the fact that one coil, or portion of a coil, is smaller in diameter than that portion which is opposed, against the inner wall of the scratcher, and that the coil is wound in a helical manner, getting smaller in diameter as it progresses outwardly from the inside wall of the [2647-375] collar. Is that not a helical coil, in your definition—I mean a conical coil in your definition?

A. That may have been a conical coil, but you didn't describe this coil.

XQ.445: What I described is a conical coil, you say?

A. Possibly so. I never went close to it, but you



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probably, to listen to it, you probably described a conical coil, but you didn't describe this coil here.

XQ.446: You mean the coil on Exhibit 49?

A. That is right. Maybe you attempted or tried to describe it.

XQ. 447: Where would you say that the definition that I gave of a conical coil is not met by the coil in Exhibit 49?           A. Read it.

(The reporter read the question: "I call your attention to the fact that one coil or portion of a coil, is smaller in diameter than that portion which is opposed, against the inner wall of the scratcher, and that the coil is wound in a helical manner, getting smaller in diameter as it progresses outwardly from the inside [2647-376] wall of the collar. Is that not a helical coil, in your definition—I mean a conical coil in your definition?")

A. And I said no.

XQ.448: All right. Now, I said where does that definition fail to define what is shown, what is included in Exhibit 49?

A. The definition, the conical coil is what you have in the drawing in the patent application, which is a pyramid. You don't have that here, even though you have a greater portion or—where is the spring that was lost this morning, the exhibit that somebody found?

Mr. Scofield: In this last answer——

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Mr. Lyon: He hasn't finished it yet. Let the witness finish.

Mr. Scofield: You are referring to application 627013, pointing to the paper Mr. Lyon had before you.

XQ.449: Go ahead with your answer.

A. Exhibit 41 has the spring fingers partially made that are in Exhibit 49. The helical, conical coil is a different coil than this is here. Let it be noted, as you start to wind the larger coil, and as the smaller coil is made, in this coil the smaller coil is brought to the outside diameter of the big coil, making [2647-377] one portion of the small coil swinging into the clear of your big coil orifice. In other words, you would have a plane on one side, and on the other side of your plane you have a perpendicular. This spring was made this way for a specific purpose, so the spring could be closed together. If it had been wound into a helical, conical coil, we found out later that we couldn't put the spring back together, that is make the coils lay close together, and therefore the helical coil, I have never made it.

XQ.450: How did you find out that you couldn't make it work, if you didn't make it?

A. I tried it. I have never been able to make it.

XQ.451: Is the structure shown in the patent application as the third form of your scratcher in Figures 4, 5 and 6; is that a scratcher containing a conical coil?

A. Yes, 4, 5, and 6, conical, helical coil.

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XQ.452: And that won't work, can't be made?

A. It can be made, perhaps, but you can't make it conical. I have never been able to make it into a scratcher.

XQ.453. Did you try to make it?

A. I have tried to make it many times. I have recently [2647-378] tried to develop a spring with more coils in it that would be a helical, conical, and when you wind it the springs are pulled apart, and to make it out of tempered wire, you can't make it. It is impossible.

XQ.454: Now, let me ask you something in that regard. You have spoken in your last answers about Petitioner's Exhibit 4I; is that correct? This is 4I.

A. Yes.

XQ.455: This is a close tolerance coil that was wound, apparently, on machinery, was it at the Weatherford Spring Company? Is that correct?

A. That is a spring that was evidently, was partially made by somebody. That is not a complete spring.

XQ.456: All right. The coils, the turns in the wire, were formed, apparently, at the Weatherford Spring Company; isn't that correct?

A. That is correct.

XQ.457: Now, that wire was wrapped around the pin, was it not?

A. It was wrapped around a type of mandrel, not a pin.

XQ.458: Was that a tapered mandrel?

A. That mandrel would have a spiral taper on

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one side, and on the other side it would have another [2647-379] spiral setting to make that type of spring.

XQ.459: Is there any such mandrel here in evidence?

A. I don't know. I don't believe there is a mandrel here in evidence that would make this specific spring.

XQ.460: Now, on your behalf there was brought in here a machine which was used to wrap applicant's Exhibit 43. Does that machine have on it the mandrel which you state was used to wrap the Petitioner's Exhibit 4I?

A. No, it is a smaller mandrel.

XQ.461: Is there any difference between the mandrel which was used to wrap Exhibit 43 and the mandrel which was used to wrap the coils for Exhibit 49?      A. Quite a little.

XQ.462: I said 49, not 4I. I am going over to this one now.

A. Well, don't jump too fast.

XQ.463: I thought you had spoken out of turn then.

A. Well, you have handed me that, and we were talking about it. Now, 49 and 4I were wound with the same mandrel.

XQ.464: That is 4I, not 4I.      A. 4-I.

XQ.465: They were both wound on the same mandrel? [2647-380]      A. Yes.

XQ.466: You know that?

A. Well, they presumably was, I guess.

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XQ.467: How about 43? Was that wound on the same mandrel that 49 was wound on?

A. No, it is wound with a much smaller mandrel, but similar, same species, though.

XQ.468: Did you make close tolerance scratchers using the bending of Exhibit 43, the small mandrel and the smaller spacing of the wires?

A. Evidently they did. It is in the machine, and the machine has been used.

XQ.469: And do you know when the smaller ones were made?

A. No. Evidently, the last was made close around '48, was made with the smaller ones.

XQ.470: And they worked out just as well, in fact better than the earlier ones, didn't they?

A. Well, neither one worked too well, I will tell you that.

XQ.471: You have used in these applications, or there has been used on your behalf, a wire substantially tangential. Would you accept the definition that your son, Jesse E. Hall, Jr., gave of "substantially tangential" as one which varies five degrees from the [2647-381] tangent?

A. No, I wouldn't accept that, because I don't believe degrees would enter into it, and I may state I talked with many machinists, I have talked with many outside people, I have talked with many attorneys, and as quick as they all see it, no matter what the degree is, if it is sidewise, they call it a tangent. It is generally called a tangent, wherever you go.

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XQ.472: Would you tell me just one attorney that you ever talked to that understood the word "tangent" to mean any sidewise angle?

A. Well, I have never talked to one, only——

XQ.473: Just tell me one.

A. That didn't consider that to be a tangent?

XQ.474: That considered any sidewise angle to be a tangent.

A. In that form there?

XQ.475: Just answer the question, please.

A. Well, I don't know the minds of other people. I just know the words that is used.

XQ.476: Well, you can't give me the name of a single attorney that ever thought that any sidewise inclination was tangent?

A. No, I wouldn't say any sidewise inclination. If it was almost straight out, I think that the attorney [2647-382] would call it more or less a radial than he would a tangent.

XQ.477: Now, where between "substantially radial" and "substantially tangent" would you put a stop-line?

A. I would put the stop-line at this point, where it began to operate.

XQ.478: All right. What point is that?

A. The point somewheres close to the pitch of this——

XQ.479: You are referring to Exhibit 49?

A. I don't know what the angle is. I would say it is——

XQ.480: Is it 45?

A. Close to 45.

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XQ.481: How far can you deviate from a 45 and get it to work, as you express it?

A. Oh, you may deviate, it will work if you push out until your tangent—it will work all the way on down until you lose the entire finger——

XQ.482: Now, the other one——

Mr. Scofield: Let him finish.

A. Then, as you push it back the other way, in a maximum diameter, it begins to lose its effectiveness as a sidewise, and begins to go back more as a radial bristle, and a lot of them would be prevented from [2647-383] running free on the pipe. It has to have that freeness to turn. The more down towards the tangent it is, the more apt to turn, so I would say that that is practically to a degree. Now, someone——

XQ.483: What do you mean? Those angles were more what you would define as——

A. Those angles were greater. I don't want to define my invention down to where someone could come in here and split a hair and make something practically just like it. My invention is broad. I don't want to define myself down to the word "tangent." I have made an invention there with side-wise bristles. We are trying to find words to express it. We are not getting a patent on a tangent. A tangent has nothing to do with it.

XQ.484: A tangent has nothing to do with it?

Mr. Scofield: Let him finish his answer.

A. A tangent is one of the words that the lawyers has picked to try to describe it, just like describing

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flying objects, a body flying off of it, that sidewise thrust is one of the broad terms. A tangent don't have nothing to do with the invention.

XQ.485: Tangent has nothing to do with it?

A. Has nothing to do with it. It is one of the statements that is in there of methods to [2647-384] describe it.

XQ.486: Tangent has nothing to do with your invention?

A. The word, if you could find another word that will express it, but we were looking for the word tangent so as to express it.

XQ.487: The Examiner of the Patent Office, or someone in agreement with the Examiner, and I believe it was the Examiner, defined that as being the angle of trajectory at which an object is thrown from the surface of a moving body. Doesn't that define it clearly to you?

A. I think the clearest——

XQ.488: Just answer the question first.

A. No.

XQ.489: You don't accept that language there?

A. I just wonder if other people accept it.

XQ.490: I am asking you.

A. I will accept in those claims any way that it can be explained and somebody understands it, and not object to it. It could have been applied to a thing being thrown off. I want to tell you, the best explanation that I know of of the type of bristle there is expressed in Mr. Caughey's letter written to Mr. Scofield concerning this in 1950.



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He used about two [2647-385] pages to express what type of tangent, what type of—what the invention is. But I don't want the Patent Office or anybody else to think that I am trying to get a patent on a tangent. I am trying to get a patent on an operating device.

XQ.491: Is there any difference whatsoever in the operation of the device shown in the three different forms of the scratcher shown in Exhibits 39A, 39B and 39C in this broad proposition that you are speaking about?       A. I don't get that.

Mr. Lyon: Just read him the question.

(The reporter read the question.)

A. You mean this——

XQ.492: In all of these three forms, do they all operate the same?       A. No.

XQ.493: They don't operate the same?

A. No.

XQ.494: They don't all reverse?

A. Oh, yes, they all do that.

XQ.495: That is what you are talking about, this broad proposition?

A. Other things are broad, too. You may have a truck, and you can ride on it, and still you can have [2647-386] a bicycle, and you can ride on that.

XQ.496: But the broad proposition that you are speaking about is the reversing, isn't it?

A. Yes.

XQ.497: And reversing is synonymous to rotating, isn't it?

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A. Reversing consists of rotation, but let me explain here, this thing has to go in a very critical place. Unless you make it so you can define it to that, then it defeats your invention.

XQ.498: Let's go back and answer the question. Are all three of these scratchers on Exhibits 39, 39A, 39B and 39C, equally effective, so far as your broad proposition is of reversing? Is that correct, just forgetting everything else?

A. They have the reversible feature in common.

XQ.499: And it is in common to all of them?

A. Well, the degree in all of them is not the same.

XQ.500: All right. Now, you have stated in this scratcher Exhibit 49 that the fingers were set at the best angle or the proper angle; is that correct?

A. Yes, I would say it was close to it.

XQ.501: In that particular scratcher there, how much farther, or do you know, could you go toward the [2647-387] radial and still have an operative scratcher? [2647-388]

\* \* \*

A. Under certain circumstances I would say you could, but I don't want to define myself to that and give somebody a loophole to jump through, but I would say that the test that I have made, that it will still turn in a similar fashion, but would kind of finally break down about the half-way distance back to radial from that.

XQ.503: That 45, and the radial is 90 degrees,

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so that if we split that in half we get about  $67\frac{1}{2}$  degrees; is that what you mean?

A. That is correct.

XQ.504: And from  $67\frac{1}{2}$  degrees to the radial, it won't operate?

A. I didn't say that. It would begin to fail to operate. It would begin to obstruct itself. At a radial position, it won't operate.

XQ.505: You know that a radial whisker will not operate, even though you have coils in it; is that what you mean?

A. No, it won't operate.

XQ.506: Even if you had a coil spring in it?

A. It is not a matter of what you put [2647-389] in it. I have seen any amount of them used and watched that Lacey run that well——

\* \* \*

A. Well, that is finished. I haven't seen any of them work.

XQ.507: Now, you have seen any number of attempts made to make a radial scratcher work, without success; is that what you mean?

A. What I call success, that is what I mean.

XQ.508: And that is what you mean in your application, serial No. 627013, where you state: "Wall-cleaning scratchers have been used heretofore where the whiskers or abrading wires were radially attached or anchored to the body member or collar. Coil mountings have been made in which the axis of the wires was parallel to the coil mounting. A fixed or rigid attachment to the sleeve of the

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collar is unsatisfactory because of the reciprocation of the well casing or drill pipe to which the collars are attached during the cleaning operation, distorts and deforms the wires, soon rendering them ineffective"? Now, does that statement of ineffectiveness apply to all of these types of [2647-390] scratchers theretofore discussed by you with rigid connection of wires to the collar, coiled parallel to the coil mountings, and to radial wires?

Mr. Scofield: Do you understand that question?

The Witness: Well, I understand part of it. Read that question over.

XQ.509: Does that statement of ineffectiveness in this application apply to all the scratchers that precede it? I will show you what I was reading.

A. Yes, all the radial scratchers.

XQ.510: All the radial scratchers, and all scratchers where you had rigid attachment of the wires to the collar are just as ineffective, too?

A. Where you have reciprocation.

XQ.511: Is it also true of scratchers where there is coil mounting in which wires are parallel to the coil mounting? Are they ineffective also?

A. I don't think that is—where are you going to go from there?

XQ.512: Your statement: "Coil mountings have been made in which the axis of the wires were parallel to the coil mountings." Now, is that ineffective, in that construction?

A. You haven't got a complete construction there. [2647-391]

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XQ.513: Well, what did you mean by that statement in your application? I will give it to you. That is the statement.

A. Back before that it states for the finger being radial.

XQ.514: Now, just read it, because it doesn't so state.

A. I am not interpreting no patent.

XQ.515: That is your application and you can't interpret it?

A. That is drawn up by my attorney. I would take that as a radial scratcher, and you would, too.

XQ.516: You mean that that is balled up by your attorney? What is balled up?

A. It is probably not balled up. I didn't say it was balled up.

XQ.517: What does it mean then?

A. We can probably get you a definition. I am not going to interpret the patent to you.

XQ.518: This is the application here under consideration, and you can't interpret it?

A. No, I can't, and I don't know whether you can or not, without discussion.

XQ.519: Well, I am trying to get you to discuss it, [2647-392] and you refuse to; is that what you mean?

A. I am doing the best I can. I am not able to discuss it.

XQ.520: Do you mean by the statement that is in your application that I read you here that a scratcher that has coil mountings in which the

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axis of the wires—and I suppose you mean the scratcher wires—“is parallel to the coil mountings” is ineffective on reciprocation?

A. I wouldn't say that. Let me see that application.

(The application is handed to the witness.)

XQ.521: I will show you right at the bottom of page 2, the last line, last two lines, at any rate, on page 2 of the application Exhibit 6R.

A. I think I understand that now. What do you want?

Mr. Lyon: Just read him the question.

(The reporter read the question: “Do you mean by the statement that is in your application that I read you here that a scratcher that has coil mountings in which the axis of the wires—and I suppose you mean the scratcher wires—‘is parallel to the coil mountings’ is ineffective on reciprocation”?) [2647-393]

A. That is right.

\* \* \*

XQ.522: What do you mean in your application by the statement “fixed to the casing”?

A. Fixed to the casing? [2647-394]

\* \* \*

XQ.526: Do you have any definition of “fixed to the casing”? A. Well, I have a definition.

XQ.527: All right. Will you give it to me?

A. It means it is fixed, it is stationary on the casing.

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XQ.528: You mean it can't move with relation to [2647-395] the casing? Is that what you mean?

A. No, no.

XQ.529: That is not what you mean, or that is what you mean? A. That is what I mean.

XQ.530: So that either fixed or anchored to the casing means the same thing; is that right, in your expression?

A. No. Anchored could mean a little different, and so could fixed. I think you define "fixed" different, the law of your application. I recall an application where it says it is fixed to so and so by welding, and then at that point that would be fixed. If it was fixed to the casing by a method to weld it on there, you read it into the law of the application, so you would have to secure this to the casing.

XQ.531: And by that you mean that it doesn't move with relation to the casing, and it is fixed by some method so that it doesn't move with relation to the casing?

A. If that is your law of your application, yes, it is fixed.

XQ.532: I don't know what you mean by the law of the application.

A. Well, I don't know what you mean by certain [2647-396] things that you said.

XQ.533: Just define for me what you mean by the law of the application.

A. I would take an application, if it should describe how anything is fastened to anything, and then you say it was applied to the casing, by then

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it would have to be applied like the law of the application specified.

XQ.534: Now, what do you mean by rigidly attached or anchored to the body of the collar, in the statement that I will read from Page 2, Lines 27 to 29, inclusive, of your application, Exhibit 6R, which reads as follows: "Wall-cleaning scratchers have been used heretofore where the whiskers or abrading wires were rigidly attached to the body member of the collar." What do you mean by rigidly attached or anchored in that expression?

A. I couldn't tell you. I would have to study the thing.

XQ.535: You don't know what you mean by rigidly attached or anchored?

A. No. I had that application prepared by an attorney and described it to him. He was describing it there. I would say rigidly attached is rigidly attached. [2647-397]

XQ.536: Does it mean it is immovably attached?

A. Why, it certainly would.

XQ.537: All right. Now, in the same application, on page 3, line 1——

A. What are you talking about? The fingers or the collar?

XQ.538: That is your statement.

A. No, you know what you are reading about; you know what you are talking about.

XQ.539: Didn't you pay attention to what I was reading? I will read it to you again and ask you the same question over again, if you have any doubt



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in your mind. The statement is: "Wall-cleaning scratchers have been used heretofore where the whiskers or abrading wires were rigidly attached or anchored to the body member or collar," and the question is, what do you mean by rigidly attached or anchored?

A. If it is rigidly attached, so it couldn't have a knuckle joint to move in, it couldn't have a coil involved.

XQ.540: Does that include a wire which was extended just through a hole in the collar, as, for example, would be true of your structure of Figures 3 of this application, if the coil were omitted from the wire? A. In one sense of the word, yes.

XQ.541: Is that the only sense? [2647-398]

A. No.

XQ.542: What is the other sense, or senses?

A. The other sense would be just like a straight wire stuck in and be fastened without any shank. In the sense there where you have got a short shank, that is just about as positive. Just like you stuck a nail into something, if you pushed it over, it would bend, but if you had a long shank, like Wright uses on his to get his spring up and down, then it wouldn't work in that sense, so if you are going to limit it——

XQ.543: Then by the statement——

Mr. Scofield: Let him finish.

A. If you are going to limit this, the shank there has the least length to the shank.

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XQ.544: I am not limiting anything. I am trying to find out what you mean in your application by "rigidly attached or anchored——" as there used.

A. I mean if you make a spring that is rigidly attached.

XQ.545: Now, do you use the word "spring"?

A. Well, finger, we will call it a finger or bristle, that is rigidly attached without provision for it to have a resilient means in it to meet this travel from one position to another. [2647-399]

XQ.546: And the structure of the wire itself merely passing through a hole wouldn't give you such resiliency as required; is that what you mean?

A. Absolutely not.

XQ.547: It won't work at all?

A. You go out and get a B & W scratcher, and I will show you. His fastens rigidly in one way, in my opinion, and I will show you how it operates rigidly, and I will show you what I am talking of.

XQ.548: I am trying to find out what you had in mind at the time you wrote this application or signed it.

A. I had in mind any type of bristle that would be sticking out radially, that didn't have provisions in it for resilient means of allowing it to go to its farthest travel that it would be subject to.

XQ.549: You understand what the word "torque" means?           A. Yes.

XQ.550: Do you mean by that that you would

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have to have some kind of a torque permitting connection between the collar and bristle?

A. No; you don't need torque. Torque is twist. I explained—— [2647-400]

\* \* \*

XQ.562: What did you mean in the application 627013 by the words, "Substantially tangentially"?

A. You speak of anything being [2647-403] substantial, that means it is very close to it, but it is not exactly a tangent. [2647-404]

\* \* \*

XQ.651: Do you recall writing a letter to Mr. Scofield in about June of 1945, in which you stated, "I am sending you a demonstration device"?

A. If you have such a letter, I probably can refresh my memory.

XQ.652: Do you have recollection of such a letter?

A. I don't believe I do at this moment.

XQ.653: You have no recollection of that, of sending him a demonstrator; is that correct?

A. No, I don't. I have recollection of discussing the demonstration with him, many, many times.

XQ.654: Just answer the question, and confine yourself to the question. Would you state that you did not send to Kansas City a demonstrator to Mr. Scofield? A. No, I would not.

Mr. Lyon: I will ask that the correspondence be produced with respect to the sending of this demonstrator to Mr. Scofield in June of 1945, together

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with the correspondence with respect to this demonstrator.

Mr. Scofield: Until the Patent Office [2647-423] instructs me to do so, I will act as they have indicated up to date, and not produce that correspondence.

Mr. Lyon: You refuse to produce the correspondence?

Mr. Scofield: I refuse until the Patent Office requests that I produce it, and when they request it, I will put it in their custody, in the custody of the Patent Office, and let them do with the correspondence as they see fit. I have offered to do that with any of the letters that the Patent Office may wish to see.

XQ.655: Where are such letters?

A. They were written to the Patent Office.

Mr. Lyon: Where are they? How would I know? I am asking you for such letters?

Mr. Scofield: I don't have the letters here, but such letters have been written, and you know that under the decision the Patent Office did not require us to produce them.

Mr. Lyon: The Patent Office said in its decision that they were without power to require the production.

Mr. Scofield: Well, let's look at what the Patent Office says.

Mr. Lyon: Sure; that might be a good idea.

Mr. Scofield: Is that the last or the next to the last? [2647-424]

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Mr. Lyon: That is the last. No, it was next to the last. It is in evidence here. You put it in.

Mr. Scofield: I believe it is referred to in the testimony. It is No. 4, which was a statement of the Patent Office, a motion by B & W—strike that No. 4, and say enumerating the issues before the Patent Office. The Patent Office says:

“There are pending for disposition in this case the following matters”—and under No. 4 it shows:

“A motion by B & W, Inc., to require production of documents by Hall.”

In passing upon that, on page 2 of the decision, the Patent Office says:

“These matters are disposed of as follows,” and No. 4 reads: “With respect to the motion by B & W, Inc., to require production of documents by Hall, it is noted that if the Patent Office has authority to require production of papers by a party, that authority should obviously be exercised sparingly, and only where circumstances clearly call for such exercise. The circumstances of the present case have been reviewed, but are not found to justify the requirement by the Patent Office that the documents in question be produced, and the motion by B & W, Inc., is accordingly denied.” [2647-425]

Mr. Wright: In view of what? Lack of authority?

Mr. Lyon: Go ahead and read the rest of it, Mr. Scofield, what they said right there.

Mr. Scofield: Under No. 5 they say: “The failure to produce the documents above referred to is

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not considered to justify striking out or disregarding the affidavits of Scofield and Hall, as requested by the alternative motion of B & W, Inc. However, the fact that such documents have not been produced has been considered in determining the weight to be given those affidavits.”

As I recall, that is the only mention that is made of those documents.

Mr. Lyon: Go ahead—it is your position you still decline to produce the documents?

Mr. Scofield: Yes. We have offered——

Mr. Lyon: Where is any such offer?

Mr. Scofield: It was made direct to the Patent Office by letter.

Mr. Lyon: Where is such a letter?

Mr. Scofield: Let me see if I have got it here. If I have I will read it into the record—I have it at the hotel. I will read it into the record tomorrow morning. Remind me to do so.

XQ.656: Will you show me at any place in the [2647-426] application, serial No. 627013, in any other applications that you have filed, where it is stated that the ends of the wires must contact the well bore?

Mr. Scofield: The applications, of course, are themselves the best evidence.

Mr. Lyon: I would like just to have anybody, you or Mr. Hall, point that out to me.

Mr. Scofield: Well, we will attempt to do that in our proof.

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XQ.657: Is there any place that you know of, Mr. Hall?

A. I don't recall what is in the applications, and it is a record.

Mr. Scofield: I will do a little night work and try to find it.

XQ.658: Is there any place in application, serial No. 627013, which states that the wires of the scratcher cannot be radial, as you have used the word, and still have a tangential wire scratcher, Mr. Hall?

Mr. Scofield: I object to that as immaterial to the issues in this case.

A. I don't know whether such a thing is in there or not.

XQ.659: In fact, the wires are shown, I mean, the coils are shown, radially disposed in this application, [2647-427] serial No. 627013, are they not?

Mr. Scofield: That is stipulated, and all the witnesses testified to it, as far as I recall.

XQ.660: Is there any place in that application that teaches you that you cannot have a tangential scratcher—and by a tangential scratcher I mean one where the wires are tangential to the collar—and still have the coils radial?

Mr. Scofield: That is, of course, entirely immaterial to the issues in this proceeding.

Mr. Lyon: Let the witness answer the question, Mr. Scofield.

Mr. Scofield: I object to it for that reason. It

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is entirely outside of the scope of the direct examination.

XQ.661: Can you point it out, Mr. Hall?

A. No, I can't without——

XQ.662: There isn't any such thing in there, is there? That is why you can't point it out?

A. There is a lot of things that is not in the application.

XQ.663: In fact, in order to be a tangentially disposed scratcher, according to your testimony, it is necessary that the coils be canted, as you used the word, isn't it? [2647-428]

A. We have cantered the coils.

XQ.664: Just answer the question, please.

A. No; it is not necessary to have the coils cantered.

XQ.665: Then you still can make a scratcher with radial coils and tangential wires; is that correct?

A. You can say such a thing, of course.

XQ.666: And have you done that thing?

A. I have not.

XQ.667: And then your statement that it is necessary to have the coils canted to have a tangential wire is not true; is that correct?

A. That is true in the sense I was using "tangential."

XQ.668: In what sense was that?

A. I was using that word "tangential" in a broad sense, the wire, you know, with a sidewise



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bristle, to give the best degree with the function of the scratcher.

XQ.669: You mean, then, that with a wire 45 degrees from the tangent, which would also be 45 degrees from the radial, that you couldn't have such a wire extent and have the coils radial?

A. You may have the coils radial if you wanted to make a thing and bend them in any [2647-429] direction; you could have radial or tangent.

XQ.670: Then your statement is now that you could make the coils extend in any direction that you want; is that what you mean?

A. I mean to make something that would work satisfactorily to the best results. That is what the intention is.

XQ.671: Aren't the coils arranged in Exhibit 49 substantially radially?

A. No, I would call it substantially a sidewise bristle.

XQ.672: I asked about the coils, not the bristles. Aren't the coils substantially radial?

A. Part of the coil is substantially radial, and part of it isn't.

XQ.673: And which part is substantially radial?

A. The bottom coil.

XQ.674: And isn't the coil that is inside, the part of the coil that is inside the hole, substantially radial?

A. Part of that coil is bent upward; then the coil, you have an outward——

XQ.675: And it is that bending upward that

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you resorted to to extend the wires to the position of about 45 degrees from the radial and from the tangent, [2647-430] isn't it?

A. No; that is what we used in bending your wires, but it is none in relation to the direction that we were using it in.

XQ.676: And this 45 degrees from tangent and 45 degrees from radial approximately is shown in Exhibit 49?

A. I don't want to limit the invention to that. It will work there. That wasn't the intention when they invented it; they intended to work over a large range.

XQ.677: I am not tying you down to 45 degrees in the answer. A. I know you are not.

XQ.678: I am only using that as an illustration, the 49.

A. However, you will hear talks in 1950 describing how broad that should be and how broad the invention was.

XQ.679: Just answer the question, please.

A. Read the question.

(The reporter read the question.)

XQ.680: Isn't the coil of Exhibit 49 radial at all parts except at the point where it is bent to move the wire outward to a sidewise [2647-431] inclination? A. That is correct.

XQ.681: In your opinion, or in your knowledge, rather—let's leave the "opinion" out—can you produce a tangential wire scratcher in which the coils

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are radial, and bend that wire on the wire bending machine, your Exhibit 33?

A. I haven't got 33. What is 33?

Mr. Scofield: That is what he wants. I have it over here.

(The machine is produced.)

Mr. Scofield: Read the question.

(The reporter read the question: "Can you produce a tangential wire scratcher in which the coils are radial, and bent that wire on the bending machine, your Exhibit 33"?)

A. No, because that don't make a complete spring.

XQ.682: What do you mean, it doesn't make a complete spring?

A. It only winds part of it. It takes another machine to go with it.

XQ.683: You mean with that machine alone that you couldn't bend a wire and put the coil in it and have the coil extend radially through a collar and have the [2647-432] outer end of the wire free so that it would extend tangentially to the collar?

A. Permanently fixed?

XQ.684: Just answer the question.

A. No.

XQ.685: Why not?

A. Because it doesn't make the whole spring.

XQ.686: All right. Now, taking into consideration Exhibit 34 in addition to Exhibit 33, is it your

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statement that by using Exhibits 33 and 34 that you could not bend or form a wire bristle for a scratcher in which the coil extended radially through the hole in the collar, the free end of the wire extended tangentially to the collar, and one end of the bristle was secured to the face, inner face or wall of the collar by a stud?

A. No, not as defining a tangent. As you are defining it and as we have been defining it, yes.

XQ.687: Well, I am using the definition to mean one which is practically at right angles to the radii, and is your answer still no?

A. No, it has never been, this machine has never been set to make what you would call a true tangent.

XQ.688: Is it possible to set that machine so that [2647-433] such a wire bristle can be made?

A. Yes, you can make another arm here, perhaps you could set this arm and make an adjustment to it that you could do it. If you wanted to, you could make many different types of angles.

XQ.689: In fact, in taking 33 and 34 together, with their various adjustments you could make such a tangential wire bristle as I have in this examination defined; is that correct?

A. You can take those two machines and reset them, and you can make a bristle with any angle.

XQ.690: Now, is there anything in either Exhibits 33 or 34 which prevents you from making such settings?

A. No. I have never been prevented from making such a setting. I have never desired to.

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XQ.691: In fact, in Exhibit 33 what is this piece?

A. That is a stud that goes on the other machine.

XQ.692: In Exhibit 33, we have on the face of the rotating shaft two pins, both of which are adjustably secured in position by means of Allen set-screws; is that correct?

A. That is correct.

XQ.693: Permitting you to change or alter the position of either of those pins by manipulation or [2647-434] loosening the Allen set-screws; is that correct? A. No.

XQ.694: You could change them?

A. You could change them, but you can't change the position of the spring.

XQ.695: I didn't say anything about the spring; where is the spring?

A. That is what you are trying to talk about. In other words, your conversation would have no sense to it.

XQ.696: I am only asking you if it is possible to change the two pins which are held in position with those Allen set-screws?

A. Change them in what regard?

XQ.697: Change them for another one, if you want to.

A. Well, change them for another one, and what have you done?

XQ.698: Or change the length of them?

A. That is possible.

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XQ.699: Or you could change with relation one to another? A. No.

XQ.700: Why couldn't you?

A. Because they are set in there straight; you are only going to wind a coil with them, no matter [2647-435] what you do to it.

XQ.701: Would you say you can't change their relation one to the other?

A. You only wind the coil with them.

XQ.702: The central element of this machine, Exhibit 33, is what I refer to as a stop plate, a little angle iron which is screwed by a cap screw to the angle plate on the body of Exhibit 33. That stop plate is adjustably fixed in position, is it not?

A. Only adjustable for one thing only.

XQ.703: What is that?

A. The length of the shank, that is right, after the coil is wound.

XQ.704: Is there anything which prevents that stop plate from being turned upwardly or downwardly from a direct parallel relation with the bracket that is secured to the machine?

A. Naturally, if you turn it any direction, that is all it would be, a stop; it has nothing to do with bending the spring or elevating the shank with relation to a tangent.

XQ.705: On the front face of that machine, Exhibit 33, we have what I call a cam plate, which is an angularly inclined throat; is that a correct definition of it? [2647-436] A. No.

XQ.706: Why isn't it?

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A. That is a correct definition, but that is only getting it in place. There is only one part of it there that is used for winding the spring.

XQ.707: Now, that throat, that cam plate in Exhibit 33, is adjustably secured to the body of Exhibit 33, so that it can be extended outwardly in the direction of the axis of the operating shaft?

Mr. Scofield: Parallel to it.

Mr. Lyon: I didn't say parallel; I said axially of it, in the same direction as the axis of the shaft.

Mr. Scofield: Parallel to the axis of the shaft.

XQ.708: It can be rotated through 360 degrees in its adjustment; is that correct?

A. I still say no matter how much you rotated it——

XQ.709: Just answer the question, please; is that a correct definition, statement, with respect to Exhibit 33?

A. That is a correct definition. You can turn it any way you want to, but you wouldn't wind a spring by turning it in any direction.

XQ.710: Do you know whether or not the way that you make the first turn of a coil on Exhibit 33 can be determined through a wide range by the position at which [2647-437] you adjust the cam plate which I have just defined?

A. No; I don't think you could adjust that plate to change the winding of the spring at all. If you adjust it out of adjustment, it won't wind. That is in order to keep it lined up with where it winds.

XQ.711: In your estimation, then, unless the

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vertical face of the cam plate is substantially aligned with the vertical face or end face of the shaft, you can't wind a coil? Is that your statement?

A. You can't wind a satisfactory coil.

XQ.712: What do you mean by a satisfactory coil?

A. It might throw it out of adjustment. You will wind a coil with the coils apart; that is all you can do there. You can make adjustments to make your coils close together or make them far apart.

XQ.713: What effect does that spreading of the coils have, if any?

A. One would be an undesirable type and the other would be a desirable type.

XQ.714: Why would one be an undesirable type?

A. A close wound one is desirable, because it is flexible and smaller space; a coil wound with the coils apart is undesirable.

XQ.715: In one of your regular scratchers for operation in an oil well, is the matter of such close [2647-438] winding of the coils of particular importance? A. Very much so in all of them.

XQ.716: Why in your regular line, not close tolerance but in your regular line, why is it important?

A. Because you want to keep your spring at its minimum width, so it won't take up space. It would be foolish to wind it any other way.

XQ.717: Would it in any way affect the operation? A. It certainly would.



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XQ.718: In what way?

A. It would put the coil spring out in the way of the other coils where they would hook onto it, and various different things like that.

XQ.719: Have you made scratchers in which the coils extended through the hole out to where they might abrade the wall of the hole? I mean the coils themselves.

A. Yes, we have that trouble, very much so.

XQ.720: And you have also made your regular scratchers where the coils have extended into the collar, so that they would engage the pipe, have you not? A. We try to avoid it.

XQ.721: But you have done it; isn't that right?

A. Not when they were made right. There could have been some made wrong. [2647-439]

XQ.722: Now, isn't it a matter of fact that it is solely a function of the operator who operates Exhibit 33, as to whether or not the coils are tightly jammed together, or whether they are spread outwardly or spread apart?

A. Read that question.

(The reporter read the question.)

A. No; it is the way the machine is set.

XQ.723: You mean the operator has no control of whether or not the turns are spread apart, or whether they are tightly jammed together?

A. Yes; can wilfully pull it off and pull it apart. We have a lot of trouble of that.

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XQ.724: And that happened a lot of times, as you have just stated?

A. Not intentionally.

XQ.725: What do you mean, it happened a lot of times, do you mean you had a lot of wilful operators trying to destroy your operations?

A. No, but a spring winder takes quite a little experience with those simple machines. Those machines haven't got enough adjustment on them, and you have got to have a little experience in doing it. The ones that have used them for some length of time get along much better than they did when they first started. [2647-440]

XQ.726: Now, it is your statement that the inclined face, or what I have called the cam plate, has no function; is that right?

A. Only to help the operator get it in place to start with.

XQ.727: What do you mean, help him to get it in place to start with?

A. That incline leads it up to the highest part of that crotch.

XQ.728: Have you ever operated one of these machines, Exhibit 33? A. Very much so.

XQ.729: Did you hold in the operation of one of these machines wire at all times in the apex of the inclined face and vertical face of what I have called the cam plate?

A. That is your intention to.

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XQ.730: You mean you tried to hold the wire at all times in that one spot?

A. Close to it; that is why I say you have got to be trained to do the thing.

XQ.731: You can hold it in that one spot, and you have so done it?

A. You have so done it, or if you don't so do in one spot, you will make a bad spring. [2647-441]

XQ.732: Now, when is Exhibit 33 properly adjusted in the setting of what I have called the cam plate?

A. I imagine it is in your close adjustment right now. I saw them wind some springs the other day.

XQ.733: Where is the apex of the vertical extent or side, and the inclined side of the cam plate, with reference to the in-face of the turning spindle or shaft of the machine?

A. It should be very much in line.

XQ.734: That is, this apex, what I have called the apex, which is the top or uppermost point where the substantially vertical face and the inclined face of the cam plate come together, is in line with the in-face of the operating shaft; is that your statement? A. Yes.

XQ.735: And that is where it should be?

A. That is where it should be now. That is the way it is in adjustment.

XQ.736: And it is in adjustment when it is at that point?

A. I would say so. I would like to state that in that plate that you have been talking about, that

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little pitch there was only designed to help the operator. It doesn't matter whether that is there or not, just so you have got that straight, something to [2647-442] hold the springs from going over.

XQ.737: That incline——

A. Has nothing to do with it, only just assist the operator.

XQ.738: The point of meeting of the incline with the vertical face determines the point at which you hold the wire; isn't that right?

A. When you first get it started, yes.

XQ.739: And at all times during winding?

A. Not necessarily, no.

XQ.470: Why?

A. That is all you have to get it started.

XQ.741: After you get it started, you hold the wire right still at that point and turn the crank and wind the wire with the crank?

A. But that pitch has nothing to do with the winding of the spring. It only helps to get it started. Suppose you put ten laps on there; suppose you had a long shaft and had ten laps, then you would have to have a distance to travel out ten laps, so you would have a line, and then you would lap back over the top of it with three or four laps; you would probably go off the line, I would say, one or two laps and not get away too bad. The idea is to keep it entirely lined up, is what makes a good [2647-443] spring.

XQ.742: You could put a spindle on this ma-

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chine, Exhibit 33, and wind the spring with ten turns on it, couldn't you?

A. Certainly you could, you could wind one as long as you wanted to.

XQ.743: As I understood what you told me, it was that your thumbs hold the wire in the apex of the vertical line and the inclined face?

A. When you start the spring, yes.

XQ.744: For the entire winding?

A. If you don't, your spring is liable to jump off or ride over on the top; that is the idea of getting this first spring started.

XQ.745: So you mean you hold it there and get the first complete turn?

A. You have got to hold it in alignment.

XQ.746: That alignment is determined by the adjustment; is that correct?

A. Not necessarily.

XQ.747: What has adjustment got to do with it?

A. Just to help the operator.

XQ.748: So the adjustment, then, in your opinion, makes no difference?

A. No, you can turn that entirely over and wind the spring. [2647-444]

XQ.749: You mean you can turn the cam plate entirely over?

A. Entirely over, and wind the spring, and if you are accustomed to lining them up, you can turn it plumb over, because we at one time it was some of them we had it straight. That was in order to try to help them get the alignment quickly. This

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machine was built for speed. It wasn't built for just——

XQ.750: All right, then, the proper holding of the wire in what I have defined as the apex has nothing to do, then, with how close the turns of the coil are maintained together; is that correct?

A. It has something to do with the first coil.

XQ.751: But it has nothing to do with how close the succeeding turns are held together; is that correct? A. No.

XQ.752: It is not correct?

A. You can make a thing there that all it does is hold the wire from going around, the same thing on a lathe. I have wound lots of springs on lathes. All you have is a straight arm on the lathe. It is just straight.

XQ.753: How far you take the end of the wire outward from the end of the spindle determines how close [2647-445] the turns of the wire in the coil will be together, does it not?

A. In this case you want them together.

XQ.754: I didn't ask you that question. Just answer the question that I did ask you.

A. Certainly that is what would determine it.

XQ.755: So that if you wanted to, you could turn a coil spring on Defendant's Exhibit 33 in which the turns were quite widely spaced, couldn't you?

A. Yes. What would be the object of that? This is a special spring that we are making here, and we are trying to have a machine to make that

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special spring. I don't see what your line of questions means, unless you just want to show you know something about a spring winder.

XQ.756: No, I don't pretend to know anything about a spring winder. Now, in this Exhibit 34, you have also the same head and shaft, have you not?

A. Yes, it is practically the same.

XQ.757: In fact, you could, by putting a longer spindle in the center of Exhibit 34, use that to wind springs, couldn't you?

A. Put an arm on the back and a stub on this side, and you have got the same winder over here, practically the same thing. [2647-446]

XQ.758: The difference is that in Exhibit 34 you have no back-stop plate as in Exhibit 33; is that true?

A. Yes, because you don't need one.

XQ.759: The other difference is that what I have called the cam plate in Exhibit 33 has been changed for a pin arm; isn't that right? A. Yes.

XQ.760: And that pin arm contains a pin which is held in position by an Allen set-screw, and that pin arm, the pin of that arm, is turned at about 90 degrees from the axis of the pin and is intended to pass through the coil of the spring formed in Exhibit 33? A. That is correct.

XQ.761: Now, that pin arm and the position of the part of that pin arm that is intended to pass through the coil in Exhibit 33 is adjustable through approximately 360 degrees by loosening the Allen set-screw, is it not? A. That is correct.

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XQ.762: And also the position of that pin with respect to the center and gripping pins of the operating shaft is adjustable vertically up and down, is it not?

A. What are you trying to get me to do? Tell [2647-447] you how the machine works altogether?

XQ.763: No, I am just trying to fix these things. Just tell me, you can adjust that arm carrying the pin through 360 degrees, can't you?

A. Well, I happened to see you sit here and watch the boys wind springs on it, and it has wound all the springs that is in the scratchers.

XQ.764: Just answer the question.

Mr. Lyon: I move to strike the voluntary answer of the witness and ask that the witness answer the question.

A. Do you want me to teach you how to wind a spring?

XQ.765: No, I don't. I want you to answer a simple question. A. Then ask one.

XQ.766: I did. I said the pin arm is adjustable through 360 degrees, isn't it?

A. And I said you could wind any adjustment that can be made on different springs.

XQ.767: You haven't answered my question.

A. Yes, I have answered it.

XQ.768: Have you answered the question whether it is adjustable to any 360 degree position?

A. No, it is not adjustable to that. [2647-448]

XQ.769: It can be turned. There is nothing to



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hold it in position from turning on the bolt by which it is secured, is there?

A. I mean to have it to still operate; no, you can't adjust it in any such manner.

XQ.770: It can be turned freely on the bolt, can't it?

A. Certainly you can turn it around and around, and around if you want to.

XQ.771: Similarly, the pin which carries the pin part that passes through the eye of the spring, that also can be turned through 360 degrees, can't it?

A. Now, what are you talking about?

XQ.772: I am talking about, if you will just listen to the question—read the question. See if you can understand it.

(The reporter read the question.)

A. Yes, any of those pins can be turned around and around and around and stopped in any position. Some of the positions you could turn the machine, you could get a spring on, but it isn't intended to be used that way.

XQ.773: So the machine is adjustable, universally adjustable, to meet any desired condition, isn't it?

A. To meet desired condition, to [2647-449] make springs with, it was very much adjustable for that.

XQ.774: As you have stated, it is adjustable

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so that you could with the two machines make a tangential wire bristle, and a radial coil, all in one bristle?

A. I don't know whether you could make all in one bristle or not. There would have to be a lot of alteration to it.

XQ.775: A lot of alteration to what?

A. You would have to alter the arm.

XQ.776: Alter what arm?

A. You are talking about bending the eye, are you not?

XQ.777: No, I am talking about the whole operation of forming the coil and making the eye.

A. You could make adjustments and change certain things. You can't make everything with it.

XQ.778: What would you have to change?

A. I don't know. I am not setting you up a set-up to make a tangent bristle, because I haven't made it.

XQ.779: You have never tried to see whether such a bristle could be turned with these two machines; is that right?

A. I never desired to make a bristle of that kind, because I have never had a use [2647-450] for it?

XQ.780: And you have never made, then, or never have tried to make the bristles as shown in the application, serial No. 627013?

A. Yes, I have tried to make that bristle for close tolerance.

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XQ.781: I mean the ones of figures 1 and 2 of the drawings of the application, serial No. 627013?

A. Because I have stated that the bristle, the type that we were using.

XQ.782: You don't know whether that bristle can be made, do you?

A. Certainly it can be.

XQ.783: It can be made on these two machines, can't it?

A. By adjusting and adding a part, or whatever is necessary.

XQ.784: What part would it be necessary to add?

A. I don't know. You would have to tinker with it to where you could make them.

XQ.785: So you can't say what part would have to be added?

A. I am not selling those machines. I just made a machine to make the bristle we were making.

XQ.786: You don't know of any part that would have to be added, do you? [2647-451]

A. No, I don't know of any part that would have to be added. I haven't tried to make that type of coil. [2647-452]

\* \* \*

Mr. Lyon: In the Los Angeles case, which has been often referred to in these proceedings, which is Jesse E. Hall versus Kenneth A. Wright and B & W, Inc., a corporation, pending in the United States District Court for the Southern District of California, Central Division, C. A. No. 7839-WM,

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on Wednesday, May 25, 1949, was called as a witness for Jesse E. Hall, plaintiff, William H. Maxwell, and that testimony is report in the transcript, pages 77 to 175. I will offer that testimony at this time.

Mr. Scofield: What volume is that?

Mr. Lyon: Volume 1, and I ask that it be copied in the record, and as so copied, be received in evidence.

Mr. Scofield: It is objected to as irrelevant and immaterial to the issues here.

Mr. Lyon: I will leave this book with you. You can return it to me.

(In order not to break the continuity of the testimony of the witness J. E. Hall, presently on the witness stand, the Maxwell testimony is set out at the conclusion of the Hall testimony, beginning on page 1240. The testimony of J. E. Hall on cross-examination continued as follows):

XQ.796: (By Mr. Lyon): The year 1949, isn't it a fact that you learned of the activities of the Baker Oil [2647-457] Tool Company in the field of the manufacture of scratchers, Mr. Hall?

A. I have learned that they were manufacturing scratchers, but I don't know what date it was. I have no recollection.

XQ.797: Wasn't it along in the latter part of '49 or first part of '50?

A. I wouldn't testify so to, because I have no recollection of the date. If you have anything to

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refresh my memory, I will be glad to do so.

XQ.798: Isn't that what the so-called Caughey letter of 1950 that you have referred to so often deals with?

A. That Caughey letter would be one of the things that would refresh my memory, and at that time I don't know whether I had seen a Baker scratcher. I know the first Baker scratchers that I saw was in Bakersfield, and I don't know what time that I saw them. In fact, I bought two of them.

XQ.799: It is the competition with Baker that is the subject matter of that letter, isn't it?

A. Well, I think that what prompted Caughey to write the letter, perhaps, was the B & W's fear of Baker into the business. I don't know; it might have been mine. I don't know; I am not a mind reader. [2647-458]

\* \* \*

XQ.801: With reference to the Jones and Berdine tests, I believe you have testified here that you did not observe any of the runs made of the B & W scratchers; is that correct?

A. I wouldn't say I did or didn't at this time, because it was a long action going on, and to actually know what they did in the pipe, I would like to tell you I didn't see them put it in the pipe.

XQ.802: You didn't see any of the runs, didn't stay and observe the running of any of the B & W tests?

A. No, I stayed there sometimes. I know at one time I must have stayed there two or three hours,

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waiting to see a certain thing that I wanted to see of my own, but I don't know what they did in the pipe.

XQ.803: You didn't see any of the scratchers tested before they were run?

A. I don't recall at this time; it has been so long ago, and I have been constantly, my mind has been constantly refreshed about the scratcher so many [2647-459] times off and on that I have often wondered now where I first did see that.

XQ.804: Would you say now that you didn't see the scratchers of the Jones and Berdine report, Figure 26 of the Petitioner's Exhibit L, placed on the pipe and run, as reported in the Jones and Berdine report, Exhibit L?

A. I wouldn't say I did or I wouldn't say I didn't. I would say that I didn't see all the operations. I saw the operations and knew what was the general principle there, but I never saw the complete detail of any part of the function. I don't think anyone did.

XQ.805: Did you see the scratcher itself on the pipe that was run? And by the scratcher I mean the one of Figure 26.

A. I couldn't testify at this time, because, as I say, I have constantly had those Jones and Berdine reports, and constantly seen it, and I was out there and knew of the circumstances, and it has been so long ago I can't recall whether I seen it or didn't see it.

XQ.806: Is your testimony the same with re-

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spect to the run that was made on the B & W scratcher, the Figure 18 of the Jones & Berdine report?

Mr. Scofield: Show him the scratcher, [2647-460] will you?

(A picture is displayed to the witness.)

A. I recall seeing some of the bristles in the bickets there, as a definite situation, but so far as seeing the scratcher on the pipe, I don't know, hardly, how I could have seen it on the pipe, because it was embedded in the cement, and I don't know which one of those forms at this time that it could have been, because it could have been several of them.

XQ.807: (By Mr. Scofield): Your last answer, you are referring to the cement billets?

A. That is right.

XQ.808: (By Mr. Lyon): Is your testimony the same with respect to the form of the B & W scratcher shown in Figure 14 of the Jones and Berdine report? (Displaying same to the witness.)

A. It would be, because I have no recollection of where I first seen it. I have constantly had this information in my possession for fourteen years, and I don't know where the first knowledge of that came to me. It was all right along together.

XQ.809: Your testimony, then, is now that you did not see any of the three B & W scratchers when they were installed on the pipe; in fact, that you didn't see the construction of any of the B & W

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scratchers except [2647-461] as seeing the ends of the wires in the cement billets; is that correct?

A. No, that is not correct.

XQ.810: Well?

A. That is your statement.

XQ.811: Did you see the scratchers?

A. I testified it has been so long ago at this time, that I don't recall what I seen at this time. If there was any testimony or anything, letters, that would refresh my mind, I would like to read it up. All of this has been so long ago and I have been very heavily involved, and I don't recall all of the specific instances back there.

XQ.812: Is your testimony now less clear with respect to the Jones and Berdine tests than it was when you gave your deposition on July 15, 1948?

A. Naturally it would be less clear; it would be more density, because it has been longer ago.

XQ.813: I will refer you to the deposition taken on July 15, 1948, at Los Angeles, California, before W. E. McClure, notary public, taken in the Los Angeles case, Civil Action No. 7839WM, and particularly to pages 117—beginning the last question, page 117, and over to line 5, 122, and in that testimony can it be agreed, Mr. Scofield, that the word "bolts" as used is an [2647-462] erroneous transcription, and Mr. McClure has so certified, that the word should be "balls"? That is your understanding?

Mr. Scofield: Yes, that is correct.



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Mr. Lyon: And I will offer that testimony at this time in evidence, and ask that it be copied into the record.

Mr. Scofield: I object to it as immaterial.

(The portion of the deposition of Jesse E. Hall, in the Los Angeles case, here offered in evidence, is from the examination styled "Cross-Examination" by Mr. Scofield, and is as follows):

Q. Were any of your tools used out there?

A. That is right. The tool that I had been using was exhibited out there and run, and several of the tests, with, with a very high success under the method of abrading the well bore and getting a cement bond to it—to the body of the well, the formation.

Q. Who had supervision of these tests?

A. Engineers from the Union Oil Company furnished the ones they looked over. It was kind of like you might call them referees, but almost every company that furnished their own device was there to assist the fellows in running them. There were many devices there that had never been sold or never been used, and which [2647-463] considerable trouble, and they would have to take their well and remove them, and caused considerable delay. Some of us fellows had come up and had been running our tools would have to wait. They only had one little dummy well they were using for that, which went on there some months.

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Q. As to the centralizers that were used out there, did you personally conduct the tests, or were they conducted by others than yourself?

A. They were conducted by others, but personally I had to do with the way they were installed, and they were moved according to my belief.

Q. Your instructions? A. That is right.

Q. Were you there when your tools were run?

A. I was.

Q. And did you see them run?

A. I saw them run in two instances.

Q. Did you read the report that was made on your tools? A. I did.

Q. You have indicated that there were some tools that were run out there that they had difficulty with. What were those?

A. B and W scratchers. They had [2647-464] very much trouble with that. They brought it out in a state, they only had a few of them made and they could not get it to work in the hole.

Q. Did you see this test?

A. I saw that test, but they went away.

Q. Who went away?

A. I don't know the men that had them there, and they came back. The next time I saw the scratchers they had the spring was straight and the next time they came back they had them twisted around and some eyes twisted in them.

Q. What was the difficulty that they had with them upon the first test?

A. They couldn't reciprocate them in the hole.

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They could not pull them back up to work them to get the mud off of the bore of the well.

Q. Why not?

A. Because they wouldn't reverse.

Q. Then what did they do to them, did you say?

A. They went and twisted them. At one time they twisted and made an eye and twisted them down smaller than the bore of the well they had them in, so that they could go in, and that exhibit is run in there. That is one test. Then another they went——

Mr. Caughey: What is he talking [2647-466] about?

Q. (By Mr. Scofield): You are talking about the Jones Report which is here on the table.

A. That is right. And another time they went and welded some little bolts (balls) on the end to try and make them spread back up the hole so that they could—they wouldn't reverse in the hole, so that they couldn't work their pipe to clean it.

Q. Let us first consider the first test when the whiskers or the wires, as I understand your testimony, were extended straight out radially from the collars. What was the result of that test?

A. They didn't make the test, because they rammed it down in the well and they had to tear their well all down. They had a dummy well they would pull apart, and taken some time. I believe it was the following week that I seen the test with the crooked wires that they have, and——

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Q. Is it your present testimony that the original scratchers that were furnished by B and W that were run in the well were inoperable?

A. That is right.

Q. Because they stuck in the well?

A. Yes, that is right.

Q. And then those were taken away and subsequently they came back with some scratchers on which [2647-467] the ends of the wires had been doubled back? A. That is right.

Q. Did you see the test on the second batch of scratchers that were doubled back? A. I did.

Q. Were you personally there and saw it?

A. I personally was there and inspected them and——

Q. Did you see the man who was running that test? A. It was a fellow, an assistant.

Q. A fellow assistant?

A. The fellow that was assisting them in running them was a Union Oil Company man.

Q. Do you know what the result of that test was?

A. Well, the result, as pointed out in this A.P.I. meeting, I don't believe it shows a bond.

Q. Bond between what?

A. Bond between the cement and the bore of the well.

Q. And then what happened subsequently?

A. They went and made another bunch. The same time we had to wait on this well. They made an-

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other bunch and they welded little bolts (balls) on the end [2647-468] of their spring fingers.

Q. Did you see those run?

A. I seen those run.

\* \* \*

Mr. Scofield: Before we adjourned last night there was an inquiry as to letters that had been sent between Mr. Hall and myself, concerning a second application that is here charged with fraud, and it was indicated on the record that the petitioner had made a motion for the production of such letters. That motion was served on my Washington associate on October 20, 1952. My associate filed a paper in the Patent Office in reply to that motion, and it is a short paper, and I will read it here into the record.

Mr. Lyon: We both have given notice that we rely upon the whole files anyway. It is your record; you can read anything into it you [2647-469] want.

Mr. Scofield (Reading): The motion dated October 20, filed by Petitioner, has been given due consideration. There is no sound reason in law or equity for respondent to supply to Petitioner certain letters identified in the motion. As to these letters, the affidavit of Thomas E. Scofield, Esq., counsel for Respondent, identified such parts thereof as are pertinent to any issue here involved. There is no occasion for divulging to Petitioner other parts of such correspondence, which are irrelevant to issues here presented, and which might serve to disclose confidential information to Petitioner.

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“The affidavit of Mr. Scofield quotes irrelevant parts of such letters upon which Respondent relies, and the authenticity of the quotation is established by the affidavit of this credible witness.

“Should the Commissioner of Patents desire to see any of the letters identified in the motion, they will be sealed and presented to him for his inspection, with the resolution that they shall not be disclosed to Petitioner. If any of such letters are believed by the Commissioner to be relevant, they will therefore be submitted to him in camera, subject to the aforesaid reservation.”

As a result of this motion and the paper just read, the Patent Office then made its findings that [2647-470] were read into the record yesterday as part of the decision of December 9, 1952.

There was also a request made yesterday by Petitioner to point out any place in any of the applications where reference was made to the fact that the whiskers, bristles or tines of the scratchers disclosed in the Hall application were long enough to contact the bore of the well.

Mr. Lyon: I believe that is a misunderstanding of what the matter requested was.

Mr. Scofield: Maybe I did misunderstand. If you will restate your request——

Mr. Lyon: It was to point out in the application where it was stated that the ends of the wires only were effective in operation.

Mr. Scofield: I will call counsel's attention to

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application 67013, particularly page 2 thereof, of the specification.

Mr. Lyon: What number?

Mr. Scofield: The full paragraph 3, beginning with the designation Fig. 1, and I will read the paragraph into the record.

"Fig. 1," referring to the drawing, "is a side elevation view, showing a scratcher embodying the invention mentioned on a well string, part of the [2647-471] scratcher being broken away, to show the method of anchoring the wire whiskers, the whiskers shown in dotted lines, illustrating the manner in which they are tensioned in the well bore."

Also on page 5 of the specifications, the same application, beginning on line 21, the specification reads:

"The coil springs, in addition, permit swinging rotation of the wires, so that the scratching elements may be rotated in any direction, while the springs keep tensioned engagement of the scratcher elements against the wall, without more than necessary friction to abrade adhering mud." I might also offer that quotation states that the application still pending in the Patent Office, serial 55619, has the same phraseology, since it is a true continuation of Application 627013. [2647-472]

\* \* \*

RDQ.1: Mr. Hall, during your cross-examination, you were examined with respect to the manner in which a radial scratcher, a scratcher with radial



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tines, functions in a well bore, and you called for a well cleaning guide, did you not? A. Yes.

RDQ.2: And one was furnished you?

A. There was.

RDQ.3: And during your answers to the examination, you proceeded to bend the wires of a wall cleaning guide during your explanation?

A. I proceeded to show the four directions the spring finger pushed down to the collar in the four directions of travel.

RDQ.4: You indicated what with respect to these wires?

A. What would happen to the wires if certain things happened to them, showing the difference between the reversible scratcher and wires anchored or secured in a certain direction, as these are.

Mr. Scofield: I now offer the wall-cleaning guide with the bent wires, which Mr. Hall used during his cross-examination, as Applicant's Exhibit No. 75. [2647-473]

\* \* \*

RDQ.15: During your cross-examination you were examined at some length concerning the disposition of the coils in the scratchers shown in your applications appearing on Exhibits 39B, 39C and 39A. I would like to have you tell me what is the reason for disposing of the coils at an angle or in a canted or cocked arrangement, as we have used the wires here, during both your direct and cross-examination.



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Mr. Lyon: Objected to as not redirect examination. Fully covered on direct examination.

A. The reason, the major reason, for extending the coil in a cocked position through the collar is to try to keep the coil enclosed in the boundaries of the collar, and when the spring finger is pushed over, allows the coil to turn somewhat on its shank, to allow the [2647-479] spring finger to go over, in bringing the coil up into the—out of the—opening of the collar to be exposed to the well bore. Where the coil is set radial, it will extend entirely through the collar, exposing at least one spring, and possibly one and a half, and then, when the finger is pushed over——

RDQ.16: By a finger, you mean the wire?

A. The wire finger, the wire bristle is pushed over or down to a smaller diameter onto the collar, it will cause the spring to lever within itself, because it is over against the wall of the collar, and it can't travel over any farther, so the spring begins a leverage within itself, and the spring coils are bent up on the back side and stretched and sprung out a considerable length, and exposing it to be rubbed against the bore of the well, dragging it off, wearing it off, so for that reason it is one of the principal reasons that we have never made a coil that is a radii, and have done a lot of experimenting, trying to get that coil in and hold it in the diameter, or in the thickness of the collar.

RDQ.17: Is there any objection to the opening

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of the coil by the wires lifting the coil through the hole?           A. Yes.

Mr. Lyon: That is objected to as leading, grossly so. [2647-480]

A. When wires go through the long spring wire, arm, will go over and hit the diameter of the coil, and then the end is pushed down, it will act as a prize, lever, to prize the coil back up through the hole.

RDQ.18: You are referring now to Exhibit 39A?

A. Yes. As you push them over, the coil will have its end fulcrum to turn, to relieve that. In the other case, it can't do that.

RDQ.19: What happens to the coil which is mounted when the wire has leverage down here, as you have indicated, by the bore of the well?

Mr. Lyon: That is objected to as leading.

A. It straightens up to the position that the radii spring starts from.

RDQ.20: And is that advantageous?

A. That is very much advantageous. That gives the travel part of the arm to go over to this spring coil, winding up in the position that the other one starts from, without even stretching it.

RDQ.21: Now, explain to me the function of the wire and the coil as shown in Exhibit 39C, which is the tapered coil.

Mr. Lyon: Same objection. Not redirect examination.

RDQ.22: The tapered coil was built to try to make [2647-481] a close tolerance scratcher, or a

(Deposition of J. E. Hall, Sr.)

scratcher that would stay within the collar with a very small margin, in other words, a very small distance, so that the collar would have a much smaller outside diameter than the scratcher I have just explained, the standard scratcher.

It was thought that to make a conical coil spring, pyramiding one coil with somewhat smaller diameter, just above, one above another, would do this, but the coil spring being coiled—bear in mind, we have to have a good spring, we have to have four coils. The diameter we start with, the outer diameter, we pyramid that up and wind a coil with tempered wire on a tapered mandrel or something, and you would have somewhat of a pig-tail effect. Putting the spring into a device to mash it back together, one fulcrum of the coil would go down against the other one, and one objection was you couldn't push it—in order to make the spring stay to a certain place after the temper is in the wire, you have to push it beyond that point, so when the resilience is exhausted, that the spring will fall stationary at the place you want it.

In other words, to make a coil spring in the manner shown in Exhibit 39C, I had come to the conclusion that it could not be made without revamping the entire manufacturing process that I had at that [2647-482] time, so, therefore, I have never made that spring, other than in the springs with soft wire, and to get them together.

I have been in the spring business, and I might say that one of the procedures in developing a

(Deposition of J. E. Hall, Sr.)

spring that I used, and which is customary to use throughout the spring business, is to use a soft lead wire of the size of the wire that you are working in, and by having the soft lead wire, with your fingers and with pliers you can easily make a design of a spring and get it together, so that in making a winding machine, that you could get nearer duplicating that.

When I made that model, with soft wire, I could push the spring coils together, because they weren't tempered, and they stayed, and I didn't realize that it was—what would happen at that point, using tempered wire.

It is possible to make this spring wire by heating it and pushing it together in a hot stage. I wasn't equipped to carry on that type of manufacturing, and by using that type of a coil, so that I would have at least three coils below the outer—the diameter of the collar, we have had to revamp all of the punching bigger holes and bigger alignment, so I never made that scratcher. [2647-483]

\* \* \*

RDQ.23: Are the coils in the scratcher shown in the Acme ad of July 7, 1941, in a cocked position, or canted, or are they radially positioned within the collar?

Mr. Lyon: Objected to as leading and suggestive, and not redirect examination; examination already been fully covered on direct examination.

A. They are in a cocked position, as shown in Exhibit 39.

(Deposition of J. E. Hall, Sr.)

RDQ.24: In reproducing the scratcher of Acme advertising of July, 1941, did the witness Doble reproduce the coils in a cocked position?

A. Absolutely not.

Mr. Lyon: That is objected to on the ground the exhibit itself is the best evidence.

RDQ.25: Are the coils of the Nucoil scratcher of B & W, Inc., in a cocked position or are they in a radial position within the collar?

A. They are in a cocked position. [2647-484]

\* \* \*

RDQ.30: During your cross-examination you were examined concerning Petitioner's Exhibit 41. Did you ever put wires into a scratcher such as are shown or appear—such as the wires that have been offered here as Petitioner's Exhibit 41?

Mr. Lyon: That is objected to as leading.

A. Absolutely not.

RDQ.31: And did you ever put wires into a scratcher which were wound with two turns in the form of a spectacle, such as is shown in the 4I Exhibits? [2647-487]

\* \* \*

A. No.

RDQ.32: What type of wire, or what type of scratcher wire, did you ever put into a scratcher, if you did, that resembled in any way Exhibit 4I?

Mr. Lyon: That is objected to as not redirect examination.

A. That wire is just partly made through the

(Deposition of J. E. Hall, Sr.)

spring winders that it was supposed to be made by.

Mr. Lyon: That wire the witness is referring to is 4I.

A. It is like the operation of Exhibit 42, which was made to finish, to complete, that spring, so it could be used in manufacturing scratchers.

RDQ.33: And what type of scratcher were those wires used in? A. Close tolerance.

RDQ.34: Do we have one in evidence?

A. We do.

RDQ.35: What is the number of it?

A. Forty-nine. [2647-488]

\* \* \*

## DEPOSITION OF MRS. JOE E. LITTERST

Mrs. Joe E. Litterest, being duly sworn, deposes and says, in answer to interrogatories proposed to her by Thomas E. Scofield, counsel for applicant, as follows:

### Direct Examination

Q.1: Would you please state your name?

A. Mrs. Joe E. Litterst.

Q.2: Are you in business?

A. Yes, I am.

Q.3: What business are you in?

A. Litterst Commercial Photo Company, located at 2807 Polk Avenue.

Q.4: How long have you been engaged in that employment?

A. I have been there myself since the early part

(Deposition of Mrs. Joe E. Litterst.)

of 1941. The business has been in existence, this is the forty-ninth year.

Q.5: I show you a photograph which has been marked for identification in this matter as Applicant's Exhibit 53. I will ask you whether or not you can identify it?

A. Yes, I can, because it has our trade-mark. That is one reason I can identify it, and in another, this particular picture happened to appeal to me, and I [2647-492] took notice of it, oh, several years ago, and put it in a separate file.

Q.6: Were you requested by me to see whether or not your concern had the original negative of this photograph which is before you?

A. My office was requested by you, and I in turn got the message.

Q.7: Did you look that matter up?

A. Yes, I did.

Q.8: Were you able to find the negative?

A. I found a negative which was made at this time, I am sure. However, it doesn't have the trade-mark on it that this one does, but many times we make a duplicate negative, especially if there is a special rush required, or if it is an intricate piece of machinery to photograph.

Q.9: Were you also asked by me to look up in your files the records to determine whether or not you could establish the date that the negative was made? A. Yes, I have.

Q.10: Have you been able to find any records

(Deposition of Mrs. Joe E. Litterst.)

by which the date of the making of the negative could be established?

A. Yes; I found the index card in my [2647-493] 1941 files.

Q.11: Do you have that card with you?

A. Yes.

(The witness produces the card.)

Q.12: What is the card that you have handed me?

A. This is the way we file our accounts for miscellaneous accounts. I say miscellaneous; it is a company that doesn't give us a great deal of business in the year. The ones that are called permanent records, we keep in a ledger, but the miscellaneous are on index cards like that.

Q.13: I note that the address on this card is 3832 Polk Avenue; is that the present location?

A. I inquired through the telephone company about this particular company here, and they are no longer in business here, I understand. They have no telephone listing, anyway.

Q.14: The address evidently was the address of the Houston Pipe Appliance Company?

A. At that time, yes.

Q.15: Can you identify the handwriting on this card? A. That is mine, definitely.

Q.16: The date in the left-hand column appears to be 6-24-41. What is your practice in making those [2647-494] out, those record cards?

A. When I first went to work there, we used to



(Deposition of Mrs. Joe E. Litterst.)

bill them the day they went out, that the photographs went out, and on the negatives we would put the date on which they were made, and later on we changed that, because we did run into confusion, and now we put the date on the negative, and the date of the billing, exactly the same.

Q.17: You have indicated that you also found the negative corresponding to the information on this card. Will you produce that, please?

A. (The witness produces a card.)

Q.18: I notice along the upper edge of this negative there appears some writing. What is that and what was the reason for putting that information along the top of the negative?

A. We file differently from most photographic concerns. We file under the company name and the date which it was made, and that is what we find on this border of the negative. It so happened, though, as I stated, that I had not been there long at this time. I went to work there in the early part of '41, and quite by accident I wrote it on the back of the negative instead of on the front.

Q.19: So that when the negative [2647-495] printed——

A. If printed correctly, the lettering up here is reversed.

Q.20: Did you make some prints of this negative?

A. At your request, I made some prints of it, and then I noticed that the lettering at the top was reversed, so I made one reverse one. I made one in

(Deposition of Mrs. Joe E. Litterst.)

reverse, on the back side of the negative, and six from the right side, so as to show the writing.

Q.21: I show you a print. Can you identify that?

A. Yes, I can. That was made from the correct side of the negative, with the lettering in reverse.

Mr. Scofield: I would like to have the reporter at this time mark the photographic copy of the card as Applicant's Exhibit No. 75. Let's change that. Let's mark these 53 A and B, so they will be associated with the print that has already been marked. Mark the photographic copy of the card which the witness has identified as Applicant's Exhibit 53A.

(The photograph referred to was marked as requested, Applicant's Exhibit 53A.)

Mr. Scofield: And mark the photographic print bearing the indicia at the top reading: "Houston Pipe Appliance Co., 3832 Polk, by Mr. Hallm. 6-23-41," as [2647-496] Applicant's Exhibit 53B.

(The photograph referred to was marked as requested, Applicant's Exhibit 63B.)

Mr. Scofield: I offer in evidence the photographic print marked Applicant's Exhibit 53. I also offer the photographic reproduction of the card which has been marked 53A and the print having the indicia at the top which I have read into the record as 53B.

Q.22: Can you explain, Mrs. Litterst, how this name happened to be H-a-l-l-m?

A. That is something that I can't explain. I

(Deposition of Mrs. Joe E. Litterst.)

guess I just misunderstood him when he told me his name. Ordinarily, I do spell a person's name, but evidently I didn't that time.

Q.23: Have you been given instructions to determine from your records whether or not there is this other negative in existence, or if the negative was prepared for some other concern? Have you been given such instructions by me?

A. To check through my files to see?

Q.24: Yes. A. Yes, I have.

Mr. Scofield: I would like to have you do so. That is all. [2647-497]

\* \* \*

## DEPOSITION OF JOHN W. EKEY

John W. Ekey, being duly sworn, deposes and says, in answer to interrogatories proposed to him by Thomas E. Scofield, counsel for applicant, as follows:

### Direct Examination

Q.1: State your name? A. John W. Ekey.

Q.2: Your residence?

A. 6147 Belmont Street, Houston, Texas.

Q.3: How are you employed at the present time?

A. I am an engineer and inventory clerk, Weatherford Oil Tool Company.

Q.4: How long have you been employed by Weatherford Oil Tool? A. Three years.

Q.5: What is your educational background? You might state your age.

(Deposition of John W. Ekey.)

A. Age twenty-five; went to Technical High School, majored in Trade Drafting.

Q.6: Where?

A. Erie Technical High School, Erie, Pennsylvania; spent some time in the army as a topographic draftsman; after the army, went to Pennsylvania State College and received a degree in Mechanical Engineering in 1950; majored in machine design as much as possible in the mechanical engineering curriculum at Pennsylvania [2647-503] State College.

Q.7: What is your topographical drafting that you referred to that you did in the army?

A. It is detail drafting of maps, contouring and man-made features and so forth, all different work on any topographic map.

Q.8: How long did you work on that in the army?      A. Eight months.

Q.9: What has been your experience in mechanical drawing since you got out of school? That is with what companies have you been employed and what were your duties with those respective companies?      A. High school or college, sir?

Q.10: Well, if you started to work while you were in high school, why give your experience.

A. Yes, sir. Back in 1943 I went to work for the Erie Forge and Steel Company as a draftsman. I worked there until October of 1944. I did detail drawing under the design engineers of all types of mechanical devices.

Then I spent some time in the freshman work in

(Deposition of John W. Ekey.)

college under the A.S.P.R.P. Program; then the army topographic work; and after the army spent some time with the Erie Ornamental Iron Works as a draftsman, making detailed drawings of the ornamental iron from [2647-504] the architects' drawings; and then my work in school, in college in mechanical engineering.

Q.11: Were you given instructions by me with respect to the making of certain drawings in the matter that we are here litigating?      A. Yes.

Q.12: What was that?

A. I was to take the——

Q.13: What were those instructions?

A. ——advertising material on the Acme scratcher from 1941, and from that make a plan and elevation drawing of the scratcher shown in the advertising. I attempted first to take the actual enlargement of that advertising and put it on a drawing board and work it back to an elevation and plan, but due to the perspective in it and the photography, it was not possible to do that, so I instead started and made a plan view and elevation and auxiliary view that will compare with the advertising.

Q.14: Did you use anything else besides the advertising itself in preparing these drawings?

A. There is an exhibit here of a half scratcher band that also was used.

Q.15: I show you Applicant's Exhibit 36 and ask you whether or not that is the exhibit you refer to in your previous answer? [2647-505]

(Deposition of John W. Ekey.)

A. Yes, it is.

Q.16: And how did you use that in connection with these drawings that you prepared?

A. I compared it with the advertising reproduction and found it to be actually a sample of the advertising, in that the number of bristles correspond to the ad and the type of bristles and the way they are installed in the collar to be that in the ad.

Q.17: I show you photostats of Petitioner's Exhibits Z and Z-1. Did you use these two papers, the advertisement and the enlargement, in connection with the drawings that you made?

A. Yes; after I compared them with this Applicant's Exhibit 36, the Exhibits Z and Z-1 were used.

Q.18: I also call your attention to a certain schedule of sizes under the word "Costs" in the ad, Exhibit Z. Did you employ that schedule at all in connection with your drawing?

A. The information contained in this advertising, including this table of costs, these cost sizes, was used, as well as some of the information in the rating, such as bristle lengths, gage of wire and such as that. I believe that is all. [2647-506]

Q.19: Did you have access at all to a photograph that was taken of the scratcher which is shown in Exhibits Z and Z-1?

A. No; I have never seen it.

Q.20: How did you go about making these drawings, and what system did you use? I would like

(Deposition of John W. Ekey.)

to have you explain that somewhat in detail, first identifying what the system was.

A. Well, as far as the system, it is just regular drafting procedure in taking any device and making a plan view and elevation view of it. The only thing different is that this includes an auxiliary view, which has a little different work on it. You just project your points at the angle you wish to have—you want to look at the object—and make an isometric drawing of it.

Q.21: What do you mean by an isometric drawing?

A. I am not aware of the definition of it. My work is from experience. The technical term and so forth, so far as isometric drawing and so forth, I don't know.

Q.22: What procedure did you use to obtain these different views?

A. I could better show that on the drawing itself.

Q.23: Will you produce the drawing you made, [2647-507] first the one of the advertising—of the scratcher shown in the advertising, Exhibit Z?

A. Here is the drawing that was made from the information Exhibit Z and Applicant's Exhibit 36.

Mr. Scofield: I request that the reporter mark the drawing as Applicant's Exhibit 78 for identification.

(Deposition of John W. Ekey.)

(The drawing referred to was marked as requested, Applicant's Exhibit 78, and handed to Mr. Lyon for examination.)

Mr. Lyon: Go ahead. You can have it.

Q.24: Mr. Ekey, I would like to have you explain what you have done in the preparation of the drawings, and what I mean by "explain," is to just describe the views, how you obtained the information for the dimensions that you have used in making the different views on this drawing, Applicant's Exhibit 78.

A. To obtain the sizes, it was necessary to determine what size scratcher is shown in that Exhibit Z. To do that, I compared the picture in Exhibit Z with this Applicant's Exhibit 36. From it I note that the number of bristles in Exhibit Z is identical with those in Applicant's—wait a minute—the number of bristles in Exhibit Z is the same as the number of [2647-508] of bristles in Applicant's Exhibit No. 36, and the placement of them is the same. Do you have that Exhibit Z?

Q.25: Yes. The advertisement itself is Exhibit Z and the enlargement is Exhibit Z-1.

A. Taking Exhibit Z-1, counting the number of bristles shown in both the top and bottom rows of bristles, I found twenty-two bristles in the top row, twenty-four bristles in the bottom row. In Applicant's Exhibit 36 there are eleven bristles in the top row of the half band, and twelve bristles in the



(Deposition of John W. Ekey.)

bottom row of the half band. This would indicate that Applicant's Exhibit 36 and the scratchers shown in Exhibit Z are the same size.

Q.26: Did you discuss this matter at all with Mr. Hall?

A. Mr. Hall agreed that the ones shown in Exhibit Z-1 and Applicant's Exhibit 36 are the same.

Mr. Lyon: I move to strike that statement—

Mr. Scofield: Wait a minute. Let him finish his answer.

Mr. Lyon: —as hearsay, as to what Mr. Hall told him.

Q.27: I asked you if you had a discussion with Mr. Hall with respect to this matter? [2647-509]

A. Mr. Hall didn't tell me that it was such and such. We discussed it, and he concurred with me that it was a five-inch scratcher, the same as the one in Applicant's Exhibit No. 36.

Mr. Lyon: I move to strike the statement of the witness with respect to the conversation had with Mr. Hall as hearsay.

Q.28: Proceed with your explanation.

A. Starting from that point, that it was a five-inch scratcher, I determined the outside diameter of the bristle as the maximum extent of the bristles, from the table labeled Cost on Exhibit Z. A five-inch scratcher is shown to have a  $9\frac{3}{4}$ -inch outside diameter. I got the dimensions of the band from Applicant's Exhibit No. 36. I determined the inside diameter and outside diameter of the band, the

(Deposition of John W. Ekey.)

width of the band and size of the holes punched in the band, size of the rivets that are used, the location of the rivets with respect to the holes.

There appears to be in Exhibit Z-1 that the bristles extend from a point so as to criss-cross one another, with the outer end of the bristle in the same plane as the opposite rim. In other words, the bottom row of bristles to the top rim. This is from Exhibit Z-1. [2647-510]

Since the dimensions of the band are taken from Exhibit 36, we got the angle that the bristle makes when it comes out of the collar.

From Exhibit Z it is stated that the bristles are made of 15-gage spring wire, and three-inch and four-inch lengths, and permits effective reversing action, and the rest of it doesn't give dimensions. I didn't use them, just the dimensions just stated. Standard size of the bristle then was taken to be three inches for the outside diameter, that this three inches would be measured from the center of the bristle coil to the outer end of the bristle. Since the bristle was to criss-cross, so that the end of it was in the same plane as the opposite rim, actually the length of the bristles is three inches. From trigonometry I can determine that the length of the bristle as shown in the plan view would be 2.32 inches, or approximately  $2 \frac{5}{16}$  inches.

Starting with the circles in the plan view at the measurements from the Applicant's Exhibit 36, which is  $5 \frac{3}{16}$ -inch diameter of the inner rim and

(Deposition of John W. Ekey.)

5 13/16 inches for the outside diameter of the band, and dividing the plan view into two halves, since the scratcher was made in two halves, I put eleven bristles in the top half and twelve bristles in the bottom half. [2647-511]

Now, they are positioned so that the distance from the edge of the band on the top row of bristles is the same as what it is on Applicant's Exhibit 36 to give me the first hole or point, center, and that is the hole that is punched in here.

Taking that point on the outer rim of the scratcher band, I strike an arc so as to cross a circle 9¾ inches in diameter, the arc being 2 5/16 inches radius. That would give me the point that the bristle would intersect this 9¾-inch outside diameter. In other words, as far as it would extend.

Drawing a line back from this outer rim to the point from which the arc was struck gives me the angle that the bristle makes with the scratcher band.

It was assumed that the bristle coil was a tightly wound coil, as can be seen both in Exhibit Z-1 and Applicant's Exhibit 36. The angle that the bristle makes with the coil axis was seven degrees and forty-nine minutes. This is determined from the thickness of the wire, the outside diameter of the coil, of the tightly wound. That led me to then strike the line that gives me the axis of the coil itself.

As observed from Exhibit Z-1, there are five turns of wire in each coil. Exhibit Z states that it

(Deposition of John W. Ekey.)

is 15-gage wire. 15-gage wire is approximately 1/16 of [2647-512] an inch in diameter. That gave me the dimensions necessary to get that 7 degrees 49 minutes.

The outside diameter of the coil was taken from the diameter of the coils in Applicant's Exhibit 36. I said before the positioning of the coils in the band was taken from both Z-1 and Applicant's Exhibit 36. The plan view was made from all this data.

From that, the elevation view and——

Q.29: Describe, if you will, how you developed the elevational view from the plan.

A. In all drawing, the plan view was looking straight down on the device. The elevation view is looking at it from the side, so the points in the plan view extend directly down to the points in the elevation, and the dimensions from the side here, as far as width of the band, as I said before, were taken from Applicant's Exhibit 36. All just standard drafting work, developing a plan and the elevation view.

Q.30: Then how did you go about developing the angular or perspective view which is shown directly to the left of the plan view?

A. The auxiliary view was done not as looking straight down on the scratcher as in the plan view, but looking at it from an angle to the plane of the scratcher, which in this particular instance I made 45 [2647-513] degrees.

(Deposition of John W. Ekey.)

The lines are projected from the elevation view at 45 degrees for any given point in the elevation view, by using a 45-degree angle.

An additional plan in ghost up here was laid in to facilitate dimensions needed in the projection from the auxiliary down. These dimensions can be obtained from measurements in the plan view and transferred over, but since there was so many points, it was necessary to make a ghost up here. That is an overlay of the plan view, to extend down.

Q.31: And that overlay appears just above and to the left of the plan?

A. Above and to the left of the plan. Those points are projected from both an elevation and this ghost. The intersection of those points then for, say, one of these perforations in the band are laid in, and then the contour of that perforation is made in the auxiliary view.

Q.32: Has this drawing been completed?

A. No, it is not complete. It takes a considerable time to make such a drawing, and it is not complete. I only show scratchers in half the band.

Q.33: Have I given you instructions to complete the drawing? [2647-514]           A. Yes.

Mr. Lyon: We will object to any alteration of any exhibit after the taking of the testimony.

A. —it has been requested that the drawing be completed.

Q.34: Is this work solely your work?

(Deposition of John W. Ekey.)

A. On this Exhibit No. 78, it is entirely my work.

Mr. Scofield: I will offer in evidence at this time a photostat of the drawing.

Mr. Lyon: A photostat won't show. It is a pencil drawing. Certainly it won't show the alleged ghost view.

Mr. Scofield: I will offer a photostat of the drawing which has been marked for identification as Exhibit 78.

Mr. Lyon: I will object to the offer——

Mr. Scofield: Just a minute. I am going to offer the drawing itself. I will offer a photostat of the completed drawing—let me change that offer—I will offer at this time the drawing itself in completed form as Exhibit 78.

Mr. Lyon: I will object to that offer on the ground that the drawing is not completed.

Mr. Scofield: Just a minute. I [2647-515] will——

Mr. Lyon: I am objecting to any change on the drawing after the witness leaves the stand.

Mr. Scofield: All right. I will offer as Exhibit 78A a photostat of the drawing in its present condition, and I will offer as Applicant's Exhibit 78B a photostat of the completed drawing.

Mr. Lyon: I will object to the latter two offers as an offer of secondary evidence, not the best evidence and incompetent, irrelevant and immaterial, and I will object to the offer of all of this evidence

(Deposition of John W. Ekey.)

as entirely incompetent, irrelevant and immaterial, and I will object to the use of the photostat or the endeavor to change or alter or allegedly complete the drawing at a time after the testimony is made, as an alteration of exhibits which are now before us.

(The completed drawing above referred to accompanies these depositions identified as Applicant's Exhibit 78; the photostat of the drawing in its present form accompanies the depositions as Applicant's Exhibit 78A, and a photostat of the completed drawing accompanies the depositions, identified as Applicant's Exhibit 78B.) [2647-516]

Q.35: Were you instructed by me to make another drawing?

A. Yes. The drawing was made under my supervision. It represents a Doble-type scratcher.

Mr. Scofield: I request that the reporter mark the drawing, which the witness has identified as a drawing of the Doble scratcher——

The Witness: Excuse me, I call it the Doble-Acme-type scratcher.

Mr. Scofield: ——the Doble-Acme-type scratcher, as Applicant's Exhibit 79 for identification.

(The drawing referred to was marked as requested, Applicant's Exhibit 79, and handed to Mr. Lyon for examination.)



(Deposition of John W. Ekey.)

Q.36: Mr. Ekey, please state what you have done in this drawing, and the procedure that you followed in obtaining the views that are shown in Exhibit Applicant's No. 79.

A. First of all, I will state this drawing was made under my supervision by another draftsman, by the name of Bob Speed. I worked up the data and he made the drawing. There is in exhibit a scratcher made by or under the direction of a Mr. Doble. I have seen that scratcher briefly, and have—— [2647-517]

Q.37: Where did you see it?

A. In Los Angeles, California.

Q.38: Did you hear Mr. Doble testify in California?

A. No, I didn't. I also have seen photographs of this scratcher, which have been offered as exhibits——

Q.39: I show you photographs, Petitioner's Exhibit JJ, Exhibit V, Exhibit W, Exhibit X and Exhibit Y, and ask you to state whether you have seen those before.

A. Those are the exhibits that I refer to. I have seen them and used them.

Q.40: I also show you Exhibits CC, DD, EE, FF and GG, all offered by the Petitioner in California; were those available to you?

A. Yes, I have seen those.

Q.41: All right, proceed and tell me how this drawing was prepared.

A. Petitioner's Exhibit JJ shows a 5½-inch



(Deposition of John W. Ekey.)

scratcher. It is of a type that I call the Doble-Acme-type wall cleaning scratcher. The dimensions for the scratcher band, the 5½-inch scratcher, I have taken partially from Petitioner's Exhibit JJ and from Applicant's Exhibit 36. As far as the width of the [2647-518] band size, holes and band diameter—not the diameter of the band, since this is 5½-inch and the other is a 5-inch.

The number of bristles can be counted in the Doble scratcher from Exhibit V. I found there were twenty-six bristles in both the upper and lower row. The band had a single weld, indicating it was made from one piece of steel, made into a circular band and welded together.

The coils of the bristles appeared to extend or be placed in the collar on a radius from the center of the band. The coils show to have four turns of wire, and they appear to be made of the same size wires as the other scratcher. So I have taken 15-gage wire with four turns per coil, with a 3-inch length bristle on a 5½-inch band. From the Exhibit A it shows a 5½-inch scratcher would have a 10½-inch outside diameter.

The photograph of Petitioner's Exhibit JJ shows the bristles to be criss-crossed, and they appear to come up to about a plane of the top of the opposite row of bristles, as shown in the elevational view on my drawing. From this 3-inch length of bristle, and the distance between the holes in the band, I determine that the length of the bristle [2647-519] in the plan view would be 2.6 inches, just a little

(Deposition of John W. Ekey.)

bit under  $2\frac{5}{8}$  inches. Taking a  $5\frac{1}{2}$ -inch band and dividing the outside diameter into twenty-six equal parts, it gives the location of each—the center line of each coil. Striking an arc from the intersection of the radius and the outside diameter of it in the plan view, using a 2.6 arc, and making an arc to intersect with the  $10\frac{1}{4}$ -inch diameter circle, it gives the point at which the bristle would reach the outside diameter.

Drawing a line from this intersection of the  $10\frac{1}{4}$ -inch circle, back to the center of the coil would give the position of the bristle relative to the scratcher band.

The size of the coil was taken to be the same size coil as in the Acme-type scratcher, made of the same type wire, having four turns per coil. Those dimensions have been given before.

The elevation view was made in the same manner as the previous elevation view, the plan view being a view looking directly down on the scratcher and the elevation a side view of it.

Q.42: Has the development of the perspective or angular view been completed in this [2647-520] drawing?

A. No, it is just started. The outlines of the band are there, but time has not permitted to finish it and get the auxiliary view, showing the bristles and everything.

Mr. Scofield: I will offer the original drawing which has been marked Applicant's Exhibit 79.

Mr. Lyon: Objected to as incompetent, irrele-

(Deposition of John W. Ekey.)

vant and immaterial, based upon fallacious assumptions.

Mr. Scofield: I will offer a photostat of the drawing in its present form as Applicant's Exhibit 79A.

Mr. Lyon: I object to the offer of any secondary evidence, or alteration of the primary evidence which is here.

Mr. Scofield: I will offer the photostat of the completed drawing as Exhibit 79B.

Mr. Lyon: I will object to any alteration of the original exhibit, or any change or addition to it after the testimony is closed.

(The completed drawing above referred to accompanies these depositions identified as Applicant's Exhibit 79; the photostat of the drawing in its present form accompanies [2647-521] the depositions as Applicant's Exhibit 79A, and a photostat of the completed drawing accompanies the depositions, identified as Applicant's Exhibit 79B.)

Q.43: I show you five sheets of drawings which have been marked here for identification as Applicant's Exhibit 25, Applicant's Exhibit 26, Applicant's Exhibit 27, Applicant's Exhibit 28 and Applicant's Exhibit 29 for identification. Will you identify those drawings?

A. These drawings were made by me in Los Angeles, California. Everything on them was put on by me except for those portions in ink, and

(Deposition of John W. Ekey.)

there is a No. 25, 26 and 27 in pencil over here that was not put on by me.

Q.44: Do you know how those drawings were made?

Mr. Lyon: Objected to as immaterial.

A. The drawings show schematically the state or condition in an oil well of Thomas Kelley & Sons, Inc., McMillan Community No. 1, back in 1939 and 1940. The information on here was obtained from the California Division of Oil and Gas report which is completed on wells in California. The [2647-522] size casing, the depth to which the casing was set, the height of the cement in the pipe, in the annulus of the hole, the tailpiece dimensions, and such as that were all taken from the Division of Oil and Gas.

Q.45: When you made the drawings, did you have the report of the Division of Oil and Gas?

A. Yes, I did.

Q.46: From what source did you get that?

A. Mr. John Hall gave it to me.

Q.47: Did you work with John Hall in connection with the preparation of these drawings?

Mr. Lyon: That is objected to as leading.

A. Mr. John Hall and I went over these reports and took off these data on them, that is as far as depth of hole, size casing and so forth.

Q.48: I show you a photostatic copy of a report which was offered in evidence as Defendant's Exhibits 17A to 17F, inclusive. Can you identify that report for me?

(Deposition of John W. Ekey.)

A. This report says that the operator was Thomas Kelley and Sons, Inc.; Field, Rosecrans; Well No.—

Mr. Lyon: I don't think it is necessary to read what the exhibits say; it is not responsive [2647-523] to the question.

A. The well number was the McMillan Community No. 1; it gives the location of the well, gives the total depth, the date drilling commenced, the date drilling was completed; it gives the casing history and completion history on this well.

Q.49: Did you and John Hall go over this report during the preparation of these drawings?

Mr. Lyon: That is objected to as leading.

A. The report shows Thomas Kelley and Sons No. 1, McMillan Community No. 1. I have labeled my drawing, so we would have some identification. The data is here as to the casing and depth to which it was set, the size hole it was set in and so forth are identical with the data that are shown in the drawing.

Mr. Lyon: I move to strike the rambling statement of the witness as in no way responsive to the question.

Q.50: How did you use this report in the preparation of your drawings? And you may refer to the drawings in succession, if you will do so, and indicate how the report was used in the preparation of each individual drawing.

Mr. Lyon: That is objected to as absolutely immaterial. [2647-524]

(Deposition of John W. Ekey.)

A. Figure No. 1 shows the status of the well on December 31, 1939. On this Exhibit 79B, under the date of December 31, 1939, it states that "cemented 6 $\frac{5}{8}$ -inch 26-pound——"

Q.51: It won't be necessary for you to read from the report. Just indicate how the data contained in the report was used in the preparation of the drawing.

Mr. Lyon: That is objected to as leading.

A. Well, that surface casing was 13 $\frac{3}{8}$ -inch, and set 1,000 feet. Exhibit 17A shows that the size of the casing was 13 $\frac{3}{8}$ , depth of shoe, 1,000 feet, which would correspond to the drawing.

The drawing states 6 $\frac{5}{8}$  casing set to 7,483 feet in 10 $\frac{5}{8}$ -inch hole.

Q.52: Where was that information taken from?

A. Exhibit 17A states 6 $\frac{5}{8}$  casing, 7,483 feet; size of hole, 10 $\frac{5}{8}$ .

The other data is back in the reading material. The complete depth of the hole was 7,693 feet. That is to the bottom of 7 $\frac{5}{8}$  hole.

Q.53: That drawing which has been offered in evidence as Applicant's Exhibit 25S indicates it is the [2647-525] status of the well on December 31, 1939. Why was that date put on the drawing?

Mr. Lyon: That is objected to as leading, immaterial.

A. The date that the 6 $\frac{5}{8}$ -inch casing was cemented in the well, according to the Oil and Gas report.

(Deposition of John W. Ekey.)

Q.54: Now, refer to the drawing, Applicant's Exhibit 26S, which indicates the status of the well on January 6, 1940. From what source did you get the data that is put into that drawing on this particular exhibit?

A. Exhibit 17A and Exhibit 17B.

Q.55: Now, Exhibit 27S for identification, I note that the drawing indicates that it is the status of the well on January 12, 1940. Indicate the source from which you obtained the data shown in the drawing which has just been referred to.

A. The Exhibit 17A and 17B.

Q.56: Refer now to Exhibit 28S, which indicates the status of the well on January 15, 1940, and indicate from the report where you obtained information shown in that drawing?

A. The Exhibits 17A, B, C and E.

Q.57: The last drawing marked for [2647-526] identification, 29S, indicates the status of the well on January 18, 1940. From what source did you obtain the information which is shown in that exhibit?

A. Exhibits 17A, B, C, E and F.

Q.58: Was a check made of the full report in connection with the preparation of these exhibits, 25S and 29S, inclusive, after they had been completed?

A. Will you state that again, please.

Mr. Scofield: Read him the question.

(The reporter read the question.)

A. Yes. After I finished the drawings, I went back and checked if the data shown concurred with



(Deposition of John W. Ekey.)

the data in the whole report, as to hole depth, size and so forth.

Q.59: With whom did you work in connection with these drawings?      A. Mr. John Hall.

Mr. Scofield: The drawings which the witness has identified and has testified about, which have been marked for identification as Applicant's Exhibit 25S to 29S, inclusive, are offered in evidence, and will counsel agree to substitution of photostats of these drawings for the originals?

Mr. Lyon: I don't object to the use of photostats in this case. I do object, however, [2647-527] to the drawings as incompetent, irrelevant and immaterial, and, as stated by the Applicant's own witness, Mr. Sweetser, as incomplete, and leaving off the scratchers, as he has testified.

Mr. Scofield: Well, let's knock off for lunch. I am about through with this witness, so that you can make your plans accordingly.

Mr. Lyon: Have you got any other witnesses?

Mr. Scofield: I have communicated with Frantz. Frantz, as you know, is a sick man.

Mr. Lyon: No, I don't know that.

Mr. Scofield: You don't know?

Mr. Lyon: No.

Mr. Scofield: Well, at any rate, he has objected to being flown down here, so, in view of what we have put in, I don't believe I will put him on during this session.

Mr. Lyon: I take it, then, you mean there are no other witnesses?



(Deposition of John W. Ekey.)

Mr. Scofield: This is the last.

Mr. Lyon: All right. That is all I was trying to get.

Wait a minute. We will be able to get finished with this witness in about fifteen or twenty minutes. I don't know of any reason for going to lunch and coming [2647-528] back.

Mr. Scofield: No, that is perfectly agreeable with me. [2647-529]

\* \* \*

### Redirect Examination

And in answer to redirect interroratories proposed to him by Thomas E. Scofield, he says:

RDQ.1: You have indicated that if you changed the eye, the anchor eye, it would likewise change the disposition of the coil in the hole, have you not?

A. Yes.

Mr. Lyon: That is objected to as leading.

RDQ.2: Does the Doble scratcher indicate that the coil is canted or distorted in the hole?

Mr. Lyon: That is object to as leading.

A. The pictures of the Doble scratcher and the scratcher itself that I saw in Los Angeles appear to have the coil's axis on a radius. In other words, the axis would be perpendicular to the outside of the band.

RDQ.3: And did you attempt to follow that disposition of the coil in that preparation of Applicant's Exhibit 79?

A. Applicant's Exhibit 79 shows the coils placed

(Deposition of John W. Ekey.)

on a radius. The coil axis is on a radius [2647-541] of the opposite band, and, as given in my previous testimony, that was the basis for starting of this positioning.

Mr. Scofield: That is all the redirect.

Mr. Lyon: That is all.

That concludes the Applicant's testimony?

Mr. Scofield: Yes, that concludes the [2647-542] depositions.

\* \* \*

### ROY BOWERSOCK

resumed the stand as a witness on behalf of the plaintiff and, being duly sworn, testified further as follows:

The Court: You were sworn and testified previously?

The Witness: That is right, your Honor.

The Court: All right. The plaintiff's case in chief is being reopened pursuant to reservation to recall Mr. Bowersock. [2663]

### Redirect Examination

(Continued)

Mr. Scofield: May I have the sales schedules that were marked, starting with Exhibit No. 175-C?

(The clerk hands documents to Mr. Scofield.)

By Mr. Scofield:

Q. You have testified before in this cause, Mr. Bowersock?      A. Yes, sir.

(Testimony of Roy Bowersock.)

Q. Did you make a trip to Houston in the early part of December?      A. Yes, sir.

Q. Who went with you?

A. Mr. Knapp, a public accountant of Long Beach, and John Ekey of Weatherford Oil Tool Company.

Q. Will you identify those gentlemen?

A. Mr. Knapp is the public accountant employed by B and W and in whose office I was asked to make sales analyses, and Mr. Ekey is with Weatherford Oil Tool Company.

Q. When you arrived at Houston, what was done?

A. We completed certain analyses that we were not able to finish in the offices of Mr. Knapp with the records here available in Long Beach.

Q. What records did you have there at Houston?

A. They were the records of the distributors of B and W that we had requested J. L. Robinson—I will have to refer [2664] to these (producing documents). We requested those of W. L. Somner, J. L. Robinson, Fuller Equipment Company, Hub Supply and Louisiana Supply Company, and they were the Houston records that had all the sales invoices—I mean had the delivery tickets and the original copies of the sales invoices that we were interested in looking at, at Houston.

We had previously seen copies of the Houston office invoices that had been sent over to Long Beach, but with respect to these particular com-

(Testimony of Roy Bowersock.)

panies we had not, and we weren't able to get the ultimate consumer, and hence we went to Houston in order to look at the original files of B and W, Incorporated, which, as I say, included the delivery tickets and other items to reflect this data.

Q. Where were these documents located, these records at Houston?

A. They were located at the office or warehouse of B and W, Incorporated. Actually they were examined in the hotel room of Mr. Knapp rather than in the office of the company there.

Q. Now, what were you actually furnished there by Mr. Knapp, that is, I want you to itemize, if you will; were they invoices, sales tickets, delivery tickets, or just what was furnished you by Mr. Knapp?

A. Well, as I say, they were the B and W copies of billings to these particular companies, and along with the [2665] delivery tickets and orders, and so forth; and in the case of the distributors there were also copies of their invoices to customers.

For example, J. L. Robinson bills customers, and copies of the invoices of J. L. Robinson to the customers were in the files in Houston. The same with the other distributors.

Q. Now, who besides the distributors were you furnished, that is, were you furnished with copies of invoices of the supply stores, by Mr. Knapp?

A. We only asked for Louisiana Supply Company and Hub Supply Company—no, wait a minute. Hub Supply is a distributor. I believe it is Somner,

(Testimony of Roy Bowersock.)

W. L. Somner Company, and they were the only ones we requested other than the three distributors, Robinson, Fuller, and Hub Supply.

Q. Were you able to find from these records—were you able to determine from these records how sales were made of B and W scratchers and centralizers, and I mean by that whether the sales were made by B and W direct, whether they were made through distributors, or whether they were made through supply stores, or in all three ways, that is, were you able to determine from these records, these sales records, how sales were made?

A. Yes, sir. Sales were made in all three ways, principally through—in the case of the supply stores, through B and W billing the merchandise to the supply store [2666] and then the supply store bills out to the customers. And in the case of the distributors, they may sell also to supply stores as well as directly to the consumer.

In any case, on these copies of the invoices, particularly in the case of the distributors, the ultimate consumer was marked on their invoices in most cases, even though it was billed to a supply store.

Q. That is, where the distributor made the sale?

A. That is right. For example, if J. L. Robinson were to bill a supply store, as a rule the ultimate consumer would be shown on the invoice.

Q. How about where the distributor made the sale direct to a customer, was the ultimate consumer shown on the invoice?

A. Yes, copies of the distributor's invoices were

(Testimony of Roy Bowersock.)

in the file, and, as a consequence, if it was made direct to the customer it would be billed to him.

Q. Now, how about the B and W sales, were there any sales made direct by B and W to the customers, to the ultimate customers?

A. You understand that in your request for my trip to Houston, we did not look at all of the sales records in Houston of B and W when we were there, and we were not really interested in any sales other than the ones made through these five parties. We did not look at any billings to [2667] anybody in Houston. We did so inspect their invoices here at Long Beach, or the copies that we had of the Houston invoices, and there were some cases where they sold direct to the consumer.

\* \* \*

Q. (By Mr. Scofield): Did you find, from the Houston sales records, whether B and W had made any direct sales to the Gulf Oil Company, to the Standard of California, to the California Company, or to Amerada?

The Court: That is only four, I believe.

Mr. Scofield: What is the fifth?

Mr. Subkow: The Texas Company.

Q. (By Mr. Scofield): Or The Texas [2668] Company?

A. Not from these Houston records, no, I did not; no direct sales.

Q. How did you find that the sales were made to these companies, principally?

(Testimony of Roy Bowersock.)

A. They were made through supply stores or the distributors.

Q. And did you find that the invoices or the delivery tickets of the supply stores and distributors indicated the ultimate customer?

A. Well, I will make this statement, that insofar as the distributors were concerned, there was rarely a delivery ticket in the files at Houston, but there was a copy of the distributor's invoice which indicated the ultimate consumer.

The delivery tickets were available with respect to all direct shipments by B and W, Incorporated to a customer, but the bulk of them, insofar as the distributors were concerned, were on copies of the invoices of the distributors. [2669]

All of these distributors had billings under their own names. For example, J. L. Robinson billed out as "J. L. Robinson," and copies of his invoices were furnished to B & W and they were in the files; and that is the source of our information with respect to sales to destination.

Q. Was there any explanation made to you why copies of these distributors' invoices were in the B & W sales records?

A. Well, I have an understanding, but I am not too sure whether it was something that Mr. Knapp and I surmised or whether it is fact. In other words, I understand that they were prepared to furnish copies of invoices to B & W, but I would hate to state that as a fact or I was told that as a fact.

Q. In any event, you found them there?



(Testimony of Roy Bowersock.)

A. Yes, sir.

Q. What did you do with these sales records on your arrival in Houston and when you had been furnished them or they had been made available to you by Mr. Knapp? How did you go about preparing these schedules and charts?

A. Well, may I clarify something, Mr. Scofield?

Q. Go ahead.

A. You will understand that the bulk of the analyses were made out here in Mr. Knapp's office in Long Beach and that we prepared analyses in the same fashion that I had [2670] previously prepared with respect to the Weatherford sale showing on all invoices that indicated one of these companies: Texas Company, Union Producing, Gulf Oil Companies, the case of Amerada's California sales only, and they have left one out. But those companies that have been mentioned, we have analyzed the sales of scratchers and centralizers to these corporations as indicated on the invoices or the copies of the invoices.

In the case of sales made by B & W through their Houston office there was simply copies of those invoices in Long Beach office and they were analyzed along with the Long Beach invoices. And then we realized that because certain of these exhibitors and a couple of supply companies did not show in some cases the ultimate user, that the original records might show that, and then that information we picked up down in Houston and added it to our analyses previously made, and then completed



(Testimony of Roy Bowersock.)

monthly summaries and totalized those in the same fashion that we had previously totalized Weatherford sales by months throughout the period from January 1, 1947, through October, 1953.

Q. So your preliminary work had been done in Long Beach?      A. That is correct.

Q. And what you did in Houston was to take the sales that were made available and supplement the Long Beach work? [2671]

A. That is right.

Mr. Scofield: Your Honor, to simplify this matter for you—I hope we have simplified it—we have marked, for instance, the summary sheets and the detailed sheets, for instance, of the Gulf Canadian Oil Company by the same exhibit number, but a different letter, as the exhibits numbers that were given the Weatherford sales records that were previously put in in the record.

For instance, the Gulf Oil Company sales schedules were offered as Exhibits 175 and the charts as 175-A, 175-B, and 175-C. Now we have marked the B & W sales records, that is, the summary sheets and the detailed sheets, as Exhibit 175-C, and we have marked the charts as 175-D, 175-E, 175-F, and 175-G.

And in every case we marked B & W sales schedules and charts with a corresponding number to the number that was given the Weatherford sales charts or sales schedules and records.

So I make that short explanation in order that

(Testimony of Roy Bowersock.)

you will have that in mind when the witness testifies about it.

Q. I put before you Exhibits 175-C, 175-D, 175-E, 175-F, and 175-G for identification.

The Court: All of those have to do, as I understand it, with——

Mr. Scofield: Gulf Oil Corporation. [2672]

The Court: ——B & W sales to Canadian Gulf Oil Company?

Mr. Scofield: Yes, sir; Canadian Gulf Oil Company. [2673]

\* \* \*

The Court: Is there any contention that the plaintiffs here are entitled to damages for loss of sales of centralizers?

Mr. Scofield: Yes, your Honor, because in the case of [2674] all these—not “of all” these companies—but the case that we have chosen, and there are some other companies, the sale of the centralizers was directly influenced by the sale of scratchers; that is, where the scratchers were cut off, the centralizers were cut off simultaneously; that it was an aftermath of the cutting off of these scratcher sales. [2675]

\* \* \*

Q. Now I would like to have you explain how you prepared the detailed schedule, and then how the MC or monthly combination sheets were prepared and the significance of the summary sheets, if you will.

(Testimony of Roy Bowersock.)

A. These detailed sheets were prepared, with my instructions to a public accountant, W. D. McDonald, in Long Beach, and he sent them direct to me by mail. Along with Mr. McDonald, the John Ekey that I mentioned a few minutes ago who was with Weatherford Oil Tool, he was present and assisted also in this detailed tabulation, and Mr. McDonald sent these sheets to me, giving a copy of them to Mr. Knapp, B & W's accountant.

Now, along with that group of sheets they sent certain sheets of wells, where the well was designated but not the name. It was not known whether it was Canadian Gulf or what company it was. That is shown on pages 11, 12, 13, and 14; and there is an attached memorandum here on page 10 that is signed by Mr. McDonald, Mr. Knapp, and John Ekey to the effect that these wells were listed down simply because we wanted to ascertain whether or not they were Canadian Gulf Oil Corporation sales.

We found that the bulk of them were Canadian Gulf and [2677] they are marked with a "G" on the pages 11 to 14 just beside the invoice number, a heavy "G." That was in accordance with my instructions to Fred Drury who is sales manager of Weatherford, Ltd., and who testified in this court. And Mr. Drury checked the well numbers and wrote the letter that is shown as page 9 in this bunch of papers; and he indicates that the wells marked "G" were Canadian Gulf's. So we have then included those on the summary by means of

(Testimony of Roy Bowersock.)

the monthly combination sheets numbers MC-1 and MC-2, combining the two sets of figures and arriving at the total for the different months shown on S-1, the summary sheet. [2678]

\* \* \*

Q. (By Mr. Scofield): How many of these detailed sheets are there in Exhibit 175-C? They are numbered from 1 to what? A. 1 to 14.

Q. And what period did they cover?

A. They covered from April 1, 1951, to October 31, 1953.

Q. Now, from what sales records were those taken?

A. They were taken from copies or from Import Tool's records, from copies of Import Tool's sales records; in fact, from their retained files, copies, etc., their files which were sent down to Mr. Knapp's office and made available to us for use in this analysis.

Q. So these Import Tool's sales invoices did actually indicate the ultimate customer, except in those few cases that you have indicated?

A. That is correct; in the main they indicated the ultimate consumer. There were some cases, some few cases, where the billing from Import Tool to a supply store and it would not indicate the ultimate consumer, but we have had [2679] that all the way through. There were some such cases, but in most cases they indicated the ultimate consumer. And these documents were supplied of the two re-

(Testimony of Roy Bowersock.)

tained copies, apparently the very files of Import Tool Company and the copies that we had previously—rather, the transcript, were not copies; they were just transcripts from sales invoices showing a name of the billed to and the items of merchandise, but did not show any ultimate users or give any address of the names.

Q. Were there any of these Import Tool invoices that did not indicate the ultimate consumer, besides the ones that indicated the sales?

A. Yes, there were some that did not indicate the ultimate user.

Q. What percentage was there of these Import Tool invoices that did not indicate the ultimate customer?

A. Well, I have been informed that there was a very small percentage of them.

Q. After the——

A. And we were—understand, Mr. Scofield——

Q. Pardon.

A. ——that we were not permitted and have not been, all the way through, nor did we request—that we were not permitted to list down these sales or make any analysis so that we had total sales through any supply company, or any sales to any other company except these companies that we [2680] are interested in such as Canadian Gulf, Texas Company and the rest of them, so we would be unable to say just exactly what percentage, but it was small.

Q. Were any of the sales in Canada, to your

(Testimony of Roy Bowersock.)

knowledge, made through supply stores? Could you tell from these sales records?

A. Were any of them made through supply stores?

Q. Yes. A. Yes, sir; all of them were.

Q. All of them made through supply stores?

A. That is correct.

Q. Did not Import Tool Company make any sales direct to the customer? A. No.

Q. All right. After the detailed sheets were prepared for the Canadian Gulf how did you prepare the summaries therefrom, or how did you first prepare the monthly combination sheets?

A. The monthly combination is simply a combining of the figures on these pages 1 through 8, monthly totals there of these additional ones that we found due to the fact that we just had the well number and then found they were Canadian Gulf's on 10 to 14. They were combined together on MC-1 and -2 to get a monthly total. In the case of the months where they were not figures on both sets of papers [2681] we simply pulled over the monthly figure shown in the detailed sheets.

For example, for 1951, on page 1 of the detailed sheets, we have August sales there, and there were no corrections of that, so that was brought over into the summary sheet as August sales.

Q. Who actually did this work on the Import Tool sales records?

A. It was done by Mr. W. D. McDonald.

Q. That is "J.M.," I believe, Mr. Bowersock.

(Testimony of Roy Bowersock.)

Q. Oh, excuse me. Mr. J. M. McDonald, a Long Beach accountant, a certified public accountant, and John Ekey of Weatherford Oil Tool Company.

Q. After those sheets had been prepared did Mr. Ekey go over the records with you?

A. Did he go over these sheets with me?

Q. Yes. A. Yes.

Q. Where was that done?

A. In fact, you understand that I got these sheets directly from McDonald through the mail, and then I also reviewed them with Mr. Ekey; and you understand, also, that copies of those were left in the hands of Mr. Knapp. He had carbon copies of all the analyses that we made, except that they were not totalized. [2682]

Q. Did Mr. Knapp, the B & W accountant, sit in while Messrs. McDonald and Ekey made up these reports?

A. Yes, constantly. He, of course, did not sit in on the summarizing of it.

Q. Where did you go over this matter with Mr. Ekey? A. In Weatherford, Texas.

Q. Did you personally make the inquiry, or did Mr. Ekey make the inquiry from Mr. Drury as to these sales that had been duplicated on the invoice but the company had not been indicated?

A. I made the inquiry.

Q. You made that inquiry personally?

A. That is correct.

(Testimony of Roy Bowersock.)

Q. Now, I would like to have you put before you the first chart, which is marked Exhibit 175-D, I believe, and explain what that shows.

A. This is a chart reflecting the same data shown on the Exhibit 175-C, the monthly sales in chart form.

Q. That is the sales of what?

A. Excuse me. This is the sale of scratchers, only, made by Import Toll Company to Canadian Gulf Oil Company, and it reflects with respect to the scratchers the same information that is shown on the summary on Exhibit 175-C. [2683]

The scale at the left-hand side is the dollar volume, \$500, \$1,000, and \$1,500, and so forth, and then the years and months are at the bottom.

Q. (By Mr. Scofield): That is the horizontal scale?

A. That is right. And the sales—the first sales were in August of 1951, and then it continues through October of 1953.

Q. Who prepared this chart?

A. This chart was prepared by Mr. Ekey, by my instructions.

The Court: Who is Mr. Ekey?

The Witness: John W. Ekey is with the Weatherford Oil Tool Company.

Q. (By Mr. Scofield): Is he an accountant?

A. He is an engineer, your Honor.

Q. Did he assist you in preparing these schedules of Weatherford?

A. That is correct. He did.



(Testimony of Roy Bowersock.)

Q. And he worked with Mr. Knapp and Mr. McDonald on these schedules?

A. That is right.

Q. Now, I put before you Exhibit 175-E and will you explain what that chart shows?

A. This is a chart of the sales of centralizers, of B and W centralizers, by Import Tool Company to Canadian [2684] Gulf Oil Company, and in the same manner, it was prepared from the figures shown on this, on the summary sheet of Exhibit 175-C.

Q. And does the chart indicate the dollar value of sales and the period?           A. That is correct.

Q. The same period?

A. In the same manner that the chart with respect to scratchers indicates.

Q. Now, you have a chart, I believe, Exhibit 175-F. Will you briefly explain what that shows?

A. This Exhibit 175-F represents the sales in dollars of scratchers, made both by Import Tool Company to Canadian Gulf Oil Company and by Weatherford, Ltd., to Canadian Gulf Oil Company, and the sales of Weatherford scratchers are designated by the crossed lines, I mean there is a key over here at the right, and then two lines and then a space designates the Weatherford sales, and then the checked area represents the B and W sales of scratchers to Canadian Gulf Oil Corporation.

Now, for example, in the case of August, 1951, the sales of Weatherford, which are shown in the lower portion, were about \$2,700 that month, and

(Testimony of Roy Bowersock.)

then the sales of B and W is the small portion that is tacked on top of it.

The Court: In other words, you have taken the charts, [2685] Exhibits 175-A and 175-B, covering scratchers and centralizer sales by Weatherford to the Canadian Gulf, and Exhibits 175-D and 175-E for identification covering scratchers and centralizer sales of B and W to Canadian Gulf, and you have combined all four of those charts into this Exhibit 175-F, have you not?

The Witness: That is correct.

The Court: That is one superimposed on the other in effect, is that correct? Is that correct?

The Witness: Not quite. No, it isn't superimposed on the other, because, as I pointed out, for the month of August, 1951, you will note the Weatherford sales is the lower portion up above the \$2,500 mark.

The Court: You mean the B and W sales, do you not?

The Witness: No. That is Weatherford, Weatherford sales up past the \$2,500 mark, and then, as shown on Exhibit 175-D, the B and W sales were less than \$500, and that small 500 is an extension on top of the Weatherford sales, so that if you take the top mark of all of these points on Exhibit 175-F, it will represent the combined sales of both Weatherford and B and W sales.

The Court: Of both companies?

The Witness: That is correct.

(Testimony of Roy Bowersock.)

The Court: But where the column stands as indicating one of Weatherford or B and W alone, that represents the [2686] entire sales of that particular company?

The Witness: That is correct.

The Court: Where two columns are combined, you consider the length of each column separately as indicating the sales of that company?

The Witness: Yes. Or looking at it differently, to consider the combined total height of the column as being the total of the sales of the two companies.

The Court: So that the charts have not been superimposed, they have been combined practically?

The Witness: That is correct, your Honor.

\* \* \*

The Court: No mention has been made of 175-G yet, has there? Exhibit 175-G is a combination of the charts dealing with centralizer sales, isn't that correct?

The Witness: That is correct.

The Court: And I was in error when I suggested to you that Exhibit 175-F deals with both centralizer and scratcher sales. It deals only with scratcher sales, is that correct?

The Witness: That is correct. I misunderstood you or I would have mentioned it.

Q. (By Mr. Scofield): So you have done the same thing with centralizer sales of Weatherford

(Testimony of Roy Bowersock.)

and B and W in Exhibit [2687] 175-G as you did with scratcher sales in Exhibit 175-F?

A. That is correct. [2688]

\* \* \*

The Court: Very well. Since the admissibles cannot be separated from the inadmissibles, as the record now stands with respect to Exhibits 175-C to 175-G, inclusive, the objection is sustained. [2691]

\* \* \*

Q. What schedules do you have before you now, Mr. Bowersock?

A. This is Exhibit 176-D, Union Producing Company sales of scratchers and centralizers made by B and W, Incorporated, covering the period from January 1, 1946, through December 31, 1953.

The Court: Is there any objection to the witness taking these exhibits up seriatim and testifying by reference to his testimony in respect to Exhibit 175?

Mr. Scofield: That would expedite it, your Honor.

The Court: Exhibit 175-C through -G, [2693] inclusive?

\* \* \*

Q. Now, were these detail sheets of the Union Producing Company found in Exhibit 176-D prepared in the same fashion as you prepared the sheets of the Gulf Oil, Exhibit 175-C?

A. That is correct.

Q. Now, were the invoices and summary sheets

(Testimony of Roy Bowersock.)

attached to this Exhibit 176-D prepared in the same fashion as were the sheets, the combination and summary sheets, attached to Exhibit 175-D?

A. That is correct.

Q. Now, take the charts, if you will, the first chart, I believe, being Exhibit 176-E, and just briefly state what that chart shows.

A. It is the dollar value of scratcher sales made by [2695] B and W, Incorporated, to Union Producing Company, and for the period from January 1, 1946, to October 31, 1953, showing the value at the left-hand side, and the years and months at the bottom.

Q. Is that made up from the schedule, Exhibit 176-D? A. That is correct, from 176-D.

Q. Now, take Exhibits 176-F and 176-G and state briefly what those charts show.

A. Exhibit 176-F is the same thing with respect to centralizers, and Exhibit 176-G is a total of scratcher and centralizer sales by B and W to Union Producing.

Q. Now, take the two charts, Exhibits 176-H and 176-I, and indicate, if you will, what those two charts show.

A. Exhibit 176-H is a combination of Weatherford and B and W sales to Union Producing Company.

Q. Sales of what?

A. Sales of scratchers to Union Producing Company. They are combined in the same manner as the combined chart on Canadian Gulf. The key is

(Testimony of Roy Bowersock.)

the double lines, and then a space represents Weatherford scratcher sales, and the crossed lines represent B & W scratcher sales.

The Court: In other words, from March, 1952, through August, 1953, neither company sold the Union any scratchers or centralizers?

A. That is correct. [2696]

The Court: Or any scratchers?

The Witness: That is correct.

Q. (By Mr. Scofield): How about Exhibit 176-I?

A. It is the same thing with respect to centralizers, that is, it is the same thing as Exhibit 176-H, except it is for centralizers instead of scratchers.

The Court: And I want to be clear: Each of these charts is complete for the period indicated?

The Witness: That is correct.

The Court: That is, if it indicates, as does Exhibited 176-I, that there were no centralizer sales from January, 1946, up until February of 1947, by either company to Union——

The Witness: That is correct.

The Court: That is correct, is it?

The Witness: Yes, sir.

The Court: It indicates that during 1952 and most of 1953 there were no sales at all by either company?

The Witness: That is correct.

The Court: That is correct. [2697]

(Testimony of Roy Bowersock.)

Voir Dire Examination

By Mr. L. E. Lyon:

Q. In respect to these charts and the summary of the Exhibit 176 series, which have just been offered in evidence, and also with respect to the Exhibit 175 series which was previously offered, do the tabulation and summary and charting of the scratchers differentiate in any way between scratchers and the Nu-Coil or Multiflex or wall-cleaning guide types and including rotating type of scratchers as being sold by B and W? A. No, sir.

Q. Or do they include all scratchers?

A. They include all scratchers.

Q. Irrespective of whether they are Nu-Coil, Multiflex, wall-cleaning guides, or rotating-type scratchers? A. That is correct.

Q. Now, does the same thing apply with respect to the centralizer tabulations and sales with respect to each of the tabulations and summaries, do they include all types of centralizers sold by B and W, including the concave bow, straight centralizers and the spiral centralizers, when B and W was selling such centralizers?

A. That is correct. They include all centralizers.

Q. Now, there is no differentiation and no possible differentiation in the material that you have here, between [2698] the sales of the different centralizers or different scratchers, is there?

(Testimony of Roy Bowersock.)

A. That is correct.

Mr. L. E. Lyon: Your Honor, I object to all of these exhibits on the ground that they are absolutely of no probative value whatsoever. There certainly is no claim and can possibly be no claim of unfair competition because of the sale of rotating scratchers, of wall-cleaning guides, the case here being limited to a case of unfair competition with respect to Nu-Coil and Multiflex scratchers.

The Court: Wouldn't that objection go to the weight rather than to the admissibility of it?

Mr. L. E. Lyon: I think it goes not only to the weight but to the admissibility because there is no way of segregating.

Mr. Scofield: That, your Honor will recall, was the reason I asked Mr. Barkis what was the percentage of wall-cleaning guides that were sold by B and W over certain periods and what was the percentage of Multiflex scratchers and what was the percentage of Nu-Coil scratchers. Then I asked him to prepare a statement, that is, a memorandum, of what those percentages bore, that is, the percentages of these different scratchers, to the total business of B and W scratchers over this period of time. You refused to permit me to have that information, but you said at the time that I [2699] would be permitted to go to the books of B and W and determine what percentage each one of these different types of scratchers bore to the total sales of B and W scratchers. And that was the reason for that request.



(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: As I recall your Honor's ruling, your Honor ruled that they had the books at that time and that they should make that determination at that time.

Mr. Scofield: No. That isn't the fact.

Mr. L. E. Lyon: And had the books open to them, and not to come in here and ask for some later examination of the books which I understand they are now doing.

The Court: Wasn't this information available when the examination was made; in other words, when the examination was made of these various invoices, wasn't it possible to determine what types of devices were covered?

Mr. L. E. Lyon: Every invoice shows the type of device.

Mr. Scofield: I do not recall whether the ruling was made prior to the time that we looked into the books here at Long Beach.

The Court: The objection will be overruled.

Mr. Scofield: Yes.

The Court: I deem that objection to go to the weight of it. It may go very seriously to the weight of the evidence, but not to its admissibility.

Mr. Scofield: Well, Mr. Ekey says that we were denied [2700] that information at Long Beach.

Mr. L. E. Lyon: No, you weren't. You were given all the invoices.

The Court: I am not ruling that it destroys the probative value entirely. It may not. But whatever defect there is in failing to differentiate between

(Testimony of Roy Bowersock.)

type and model of device goes to the weight of the evidence. How seriously it affects the weight, I don't indicate at this time.

Exhibits 176-D to 176-I, inclusive, are received in evidence. [2701]

\* \* \*

The Court: You are referring now, I take it——

Mr. Scofield: To the 177 series, your Honor.

The Court: That is the Gulf Oil Company, Exhibits 177-C to -E, inclusive?

Mr. Scofield: Yes, sir; it is the Gulf Oil Company. And the witness, I believe, has before him the Exhibits 177-C, 177-D, and 177-E, have you not?

The Witness: Yes, sir.

Q. Now, state, if you will, how the 177-C was prepared; and if you care to, you can refer to the preparation of this exhibit with the exhibits that you have testified to previously?

A. Exhibit 177-C, which represents the sales of scratchers and centralizers made by B & W, Inc., to Gulf Oil Corporation and its subsidiaries for the period January 1, 1946, through October 31, 1953, was prepared in exactly the same fashion as the other schedules for Canadian Gulf and Union Producing Company; and the first three pages of this Exhibit 177-C represent summary sheets, S-1, S-2, and S-3, and then there are monthly combination sheets, MC-1, MC-2, and MC3, which are, again, simply combining figures found on other sheets, and particularly to the respect to the additional sales picked up in Houston, or from pages 24, 25, 26, 27,

(Testimony of Roy Bowersock.)

28 of the detailed sheets, the detailed sheets being Nos. 1 through 28. [2702]

Q. I would like to ask you, first, whether the monthly combination sheets and the summary sheets are included in Exhibit 177-C? Are they a part of Exhibit 177-C?

The Witness: Would you repeat that? I didn't quite——

Q. Are the summary and monthly combination sheets—do they form a part of 177-C?

A. Oh, yes.

Q. Now, tell me what the charts 177-D and 177-E are.

A. 177-D represents my summarization of the scratcher sales in chart form, the scratcher sales shown on Exhibit 177-C. Again, it was prepared in the same fashion as the other charts; the dollar volume is at the left, the years and months at the bottom, and it covers the period from January 1, 1946, through October 31, 1953.

Q. And 177-E.

A. Exhibit 177-E is the same thing with respect to centralizer sales made by B & W to Gulf Oil Corporation and its United States subsidiaries.

Q. Were these three exhibits of the 177 series, -C, -D, and -E, prepared in the same fashion, partially here at Long Beach and completed at Houston, as were the preceding exhibits about which you have testified? A. That is correct.

Mr. Scofield: I offer Exhibits 177-C, 177-D, and 177-E in evidence. [2703]

(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: I presume it may be stipulated that this tabulation shows no segregation of the type and character of the devices sold, either scratchers or centralizers, as were true of the previous series, the 176 series, as testified by this witness?

Mr. Scofield: That is right; there is no segregation.

Mr. L. E. Lyon: Upon that ground and upon the ground that the matter of the sales of centralizers has been fully dealt with and is a matter of *res judicata* between the parties, I will object to these offers, both of which rulings I understand the court has previously made.

The Court: Overruled. Exhibits 177-C, -D, and -E for identification are now received in evidence.

(The documents referred to, and marked Exhibits 177-C, -D, and -E, were received in evidence.)

Mr. L. E. Lyon: I presume that there are two or three or four other series here. May the record show, without repeating it, that the same objection is made to all the pursuant testimony with respect to these other summaries and accountings that has been heretofore just expressed, without the necessity of repeating it?

The Court: I take it you refer to the testimony being the same with respect to the Exhibit 178 series, 179, 180, and 181?

(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: That is right, your [2704]  
Honor.

The Court: So stipulated?

Mr. Scofield: Yes, sir; I will so stipulate.

The Court: So ordered.

You are now turning to Exhibits 178-E, -D, and  
-E, dealing with B & W sales to California Com-  
pany, is that correct?

Mr. Scofield: Yes, sir.

Q. You have before you, Mr. Bowersock, Ex-  
hibits 178-C, 178-D, and 178-E? A. Yes, sir.

Q. Will you state if these exhibits were prepared  
in the same fashion as were the exhibits of the  
preceding companies?

A. They were so prepared in the same fashion.

Q. Did you find in the Houston records much  
information to supplement the Long Beach records  
with respect to this particular company, the Cali-  
fornia Company?

Mr. L. E. Lyon: It has been pointed out to me,  
your Honor, that the charts in this case are all  
from the California records here and that the charts  
that they have produced and the charts that we have  
produced, one may be laid on top of the other, with  
one possible exception, and that is with respect to  
Exhibit 178-E, which has an addition which we do  
not have of centralizer sales in the month of Feb-  
ruary. The scratcher sales do but the centralizer  
sales do not. [2705]

Mr. Scofield: I have not had an opportunity to  
check.

(Testimony of Roy Bowersock.)

Q. What are the charts, 178-D and 178-E? What do they show?

A. 178-D is a chart of the scratcher sales made by B & W to the California company for the period January 1, 1946, through October 31, 1953; and Exhibit 178-E reflects the centralizer sales made by B & W, Inc., to California company for the same period.

\* \* \*

Q. (By Mr. Scofield): I have furnished you, Mr. Bowersock, with Exhibits 179-B, 179-C, and 179-D, evidently made up from records of sales by B & W to the Texas Company. State, if you will, how these schedules were prepared, how the charts were made, and what the charts stand for. And if you care to, you can refer to previous charts, similar charts of companies about which you have previously testified.

A. These schedules and charts were prepared in exactly the same fashion as the ones for the companies with respect to which we have previously testified, Exhibit 179-B being a [2706] detailed sales of scratchers and centralizers and 179-C—excuse me—just scratchers. 179-B is an analysis of scratcher sales only. In the case of the Texas Company we only analyzed scratchers.

And Exhibit 179-C is a chart reflecting the B & W scratcher sales to the Texas Company for the period January 1, 1946, through October 31, 1953, the dollar volume on the left and the years and months at the bottom.

(Testimony of Roy Bowersock.)

And Exhibit 179-D is a combined total Weatherford and B & W scratcher sales to the Texas Company for the same period, prepared in the same manner in which the combined charts previously testified to were prepared. [2707]

\* \* \*

Q. You have before you the schedules and charts that were made up of the Standard of California which have been marked for identification Exhibits 180-B and 180-C, have [2708] you not, Mr. Bowersock? A. That is correct.

Q. Will you state how those exhibits were prepared?

A. They were prepared in the same fashion as the prior schedules and charts, Exhibit 180-B being the schedule of sales of scratchers and centralizers made by B & W, Inc., to the Standard Oil Company of California for the period January 1, 1946, through October 31, 1953; and Exhibit 180-C being a chart reflecting the monthly summary of the total sales, in this case, both scratchers and centralizers made by B & W, Inc., to the Standard Oil Company of California, with dollar volume indicated on the left and the years and months at the bottom.

\* \* \*

Q. (By Mr. Scofield): Finally, I put before you the schedule of sales of B & W made to the Amerada Petroleum Company which has been marked for identification as Exhibit [2709] 181-A. State, if you will, how that schedule was prepared



(Testimony of Roy Bowersock.)

and if it was prepared in the same fashion and from the same source of information as were the preceding?

A. It was. It was prepared in exactly the same fashion as the preceding schedules and reflects the sales of scratchers and centralizers made by B & W, Inc., to the Amerada Petroleum Company for the period January 1, 1946, through October 31, 1953, but it includes only the California sales and not the sales for the entire country.

Q. Do you recall whether the Exhibit 181 which was made of Weatherford sales included only the California sales of Amerada?

A. It included only the California sales to the Amerada Corporation; that is correct. [2710]

\* \* \*

### Recross-Examination

By Mr. L. E. Lyon:

Q. Your examination of the records of the B & W with respect to sales to the California company, I believe, shows—that is by your charts Exhibits 178-E and 178-D—that there were no sales made by B & W to the California company prior to March of 1948, is that correct?

A. Well, I would have to see the papers, the exhibits.

Q. You have them in front of you. Don't you have them?           A. No, sir.



(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: I will place my copies of those charts in front of you. [2712]

The Witness: May I have the question repeated, please?

Mr. L. E. Lyon: Will you read the question, Mr. Reporter, please?

(Pending question read.)

A. No. You say that there were no sales made prior to March, 1948. I believe you meant March, 1949, however.

Q. (By Mr. L. E. Lyon): What is that?

A. I believe you meant March of 1949.

Q. There were no sales?

A. There were no sales prior to March, 1949.

Q. No. Then, as to this chart, that "March" is as of 1949, that is, on both of these charts, is that correct? A. That is correct.

Q. Where the sales were made. There was no sales activity that you found of the B and W at any time showing any sales made of centralizers or scratchers to the California Company in May, June, July, August, September, or October, 1947, is that correct? A. That is correct.

Q. Did you find any sales made by B and W to the California Company on or about February 15, 1950, or within six months of February 15, 1950, of scratchers or centralizers? A. No, sir.

Q. In your charting of the sales by B and W of equipment [2713] to the Canadian Gulf—and I will place before you your charts, Exhibits 175-E and

(Testimony of Roy Bowersock.)

175-F; if you need the others, just advise me—it is true, is it not, that there were no sales made by B and W to the Canadian Gulf prior to July 23rd or 24th, 1951?

Mr. Scofield: By whom?

Mr. L. E. Lyon: By B and W or anybody on its behalf, of either centralizers or scratchers.

A. I will testify in this regard, that there were no sales made by Import Tool Company to Canadian Gulf, Ltd., prior to that time.

I will further testify that there were a few sales made by B and W, Incorporated, to supply stores in Canada prior to the date of Import Tool's commencing to sell in Canada, that there were some sales made through some supply stores in Canada that we did not have the ultimate disposition of, whether or not they went to Canadian Gulf I don't know, but there were no sales made by Import Tool Company, according to the records, prior to the date you mentioned.

Q. (By Mr. L. E. Lyon): Were there any sales made from July 23, 1951, to and including June of 1953, of scratchers to any of the Canadian Gulf by Weatherford or any of Weatherford's associated companies as shown by these charts which you have here presented, for example, Exhibit 175-F?

A. May I have the question over again? [2714]

Mr. L. E. Lyon: Read the question, please, Mr. Reporter.

(Pending question read.)

(Testimony of Roy Bowersock.)

The Witness: Well, may I have the detailed sheets prior to these charts, or may I have a couple more charts?

This, the chart with respect to centralizers here——

Q. (By Mr. L. E. Lyon): I said "scratchers." The question was limited to scratchers.

A. Excuse me. May I have those dates stipulated in the question again?

Q. July 23, 1951, to June of 1953.

A. To June. Well, from my chart in front of me, I don't know what date it cut off, it doesn't reflect, but it reflects some sales for the month of August, 1951, and it reflects sales in June of 1953, made by Weatherford, but as to the exact day of the month, I would have to have the detail sheet to say what the cutoff was, but between that period of sales made by Import Tool there were no sales made by Weatherford.

Q. In June, 1953, there was a volume sale made to the Gulf companies by Weatherford, Ltd., of Canada, wasn't there? A. I don't know.

Q. That is what your chart shows, doesn't it?

A. There was a sale—there were sales made in the month of June, that is correct, of 1953. [2715]

Q. And those were the sales the records of which have heretofore been produced, and you testified as to them before, upon which a provisional discount was given, isn't that correct?

A. No, I did not testify—I believe that it was

(Testimony of Roy Bowersock.)

Mr. Drury that testified as to the Canadian sales, before.

Q. You heard Mr. Drury's testimony?

A. Yes, sir.

Q. And that was the provisional discount sale that started in June of 1953, was it not?

A. I haven't the remotest idea.

Q. From what records did you compile Weatherford's sales beginning in June of 1953?

A. We simply compiled this chart——

Q. I said from what records did you compute Weatherford, Ltd., sales for June of 1953. I did not ask you about the charts.

A. I didn't compute them. Mr. Drury computed them.

Q. I see. Then, all the material which you have on Exhibit 175-F with respect to Weatherford sales beginning in June of 1953, is entirely hearsay as far as you are concerned, is that correct?

Mr. Scofield: I object to that, your Honor. That is already in evidence in the other chart.

The Court: Sustained. [2716]

\* \* \*

By Mr. L. E. Lyon:

I would like to have placed before the witness Exhibits 178-E and -D.

The Court: Does the clerk have them?

Mr. L. E. Lyon: They are the charts of this morning.

The Court: 178-D and -E?

(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: Yes, your Honor. I have them.

The Court: The California Company.

Mr. L. E. Lyon: Yes, sir.

Q. You have testified that during May of 1947, these charts show that B & W was selling nothing to the California Company, is that correct?

A. That is correct.

Q. I would like to have you mark on these charts, just so it will show the date of May 21, 1947, the date of Plaintiff's Exhibit 44. Will you just mark where it would appear on that chart?

The Witness: May I have that question read?

Mr. L. E. Lyon: Just mark on there at the point where the chart shows "May 21, 1947," the notation: "Plaintiff's [2718] Exhibit 44—Barkis' letter to Toussaint." I think maybe you had better have an ink pencil or an ink fountain pen so somebody can read it.

The Witness: I have one, Mr. Lyon.

Mr. L. E. Lyon: You have one.

(Witness marking.)

Q. Then I would like to have you mark there at the date of June 13, 1947, where the date would appear, the notation: "Plaintiff's Exhibit 21—Weatherford Spring Company's letter of indemnification to Standard Oil Company of California."

(Witness marking.)

Mr. L. E. Lyon: I would like to have Exhibit 91,

(Testimony of Roy Bowersock.)

if the clerk please. I do not seem to have a copy of it. That is a letter from Barkis to the California Company at New Orleans, dated September 22, 1947.

The Clerk: 91?

Mr. Scofield: 91 is a deposition.

Mr. L. E. Lyon: It is in there.

Q. Will you mark on there the date of September 22, 1947, "Barkis and Styles"—

The Witness: Just a moment. May I have that date again?

Q. September 22, 1947. A. Right.

Q. "Barkis and Styles conference with Goerner at [2719] New Orleans, Exhibit 91."

(Witness marking.)

Mr. L. E. Lyon: Now, may I have Exhibit 100, please? It is a letter of February 15, 1950, from Mr. Scofield to Mr. Walshe.

Q. And while we are getting that letter, will you mark on there at the date of February 15, 1950, a notation: "Exhibit 100—letter of Scofield to Walshe of February 15, 1950"?

(Witness marking.)

The Clerk: This is supposed to carry 93 to 106. It seems the last one was 99.

Q. (By Mr. L. E. Lyon): While we are looking for that, will you state, as shown by the chart Exhibit 178-E, the total volume of centralizer business that that chart shows that B & W did with the Cali-

(Testimony of Roy Bowersock.)

fornia Company from the beginning of that chart to and including February 15, 1950.

A. Approximately \$450.

Q. How long was it after February 15, 1950, before B & W did any more centralizer business with the California Company?

A. A little over a year. It was April, 1951.

Q. What was the total business that B & W did with the California Company in centralizers in the year 1951?      A. A little over \$1,500.

Q. Looking at the chart, Exhibit 178-D, will you give [2720] me the total volume of business that B & W did in scratchers with the California Company from the beginning of the chart in January, 1946, to and including February 15 of 1950?

A. Approximately \$500.

Q. And from after February 15, 1950, to and including the month of September, 1952, what was the total volume of scratcher business done by B & W with the California Company?

\* \* \*

A. February 15, 1950, through September of 1952, approximately \$200. [2721]

Q. In your consideration of the accounts for the Weatherford companies, do you consider the questions of possible liability of the company or companies under warranties with respect to their sale of equipment?

The Witness: What was the question?

(Testimony of Roy Bowersock.)

Mr. L. E. Lyon: Will you read the question, please?

(Pending question read.)

Q. (By Mr. L. E. Lyon): With respect to their warranties on sale of equipment.

A. Are you speaking of the time when I was in public accounting?

Q. I am speaking of all the times that you had anything to do with the accounts of any of the plaintiff corporations or individuals.

A. We have. We considered the question of liability, in public accounting, as much as it was possible to determine, and as a public accountant it appears the only thing that can be done in such matters is to comment on it in an audit report.

Q. You know, do you not, that practically all equipment sold to the oil companies is sold on written orders which specify on their face that the seller assumes all liability for any loss by the purchaser because of patent claims or patent infringement?

A. No, I don't believe I know that. [2722]

Q. You have never seen any of the purchase orders of the companies to whom Weatherford or any of the plaintiff organizations or individuals sell? A. I have seen some of them.

Q. And the companies that have carried these accounts sell through the National Supply Company as a supply store do they not? A. Yes, sir.

Q. I place before you one of the purchase orders of the National Supply Company and ask you to



(Testimony of Roy Bowersock.)

read into the record the statement beginning here where I place my finger on the face of that order.

A. (Reading): "It is agreed that the material ordered shall comply with all Federal laws relative thereto and that you will defend and save harmless this company from loss, cost, or damage by reason of actual or alleged infringement of letters patent concerning same."

Q. Hasn't that notice been observed by you on all purchase orders that your companies have received from the National Supply Company?

A. Well, you understand that I do not have anything to do with Weatherford Oil Tool Company and that I wouldn't know anything about this.

Q. You never saw, on any purchase order to the Weatherford Spring Company, then, the notice from the [2723] National Supply Company that you have just read into the record?

A. I may have.

Q. Well, did you or didn't you?

A. I don't remember.

Q. But your statement is that you never considered that at all in any of the accountings as a matter of possible liability of the Weatherford Spring Company, is that correct?

A. That is not. That is not correct.

Q. Well, if you can't remember whether you saw it or not, how can you remember whether you took it into account? That is my point.

Mr. Scofield: I object as argumentative, your Honor.

(Testimony of Roy Bowersock.)

The Court: He is an expert witness. It is argumentative in form, but he may answer.

A. My point is, in the first place, while I was in public accounting I made an audit or audits of Weatherford Oil Tool Company. I am no longer in public accounting. I have nothing to do with Weatherford Oil Tool Company. I wouldn't have anything to do with the setting of the policies even at that time. I am now employed by Mr. Hall, and at the time I was in public accounting I did not make the statement that we did not take such things into consideration.

I did say that we commented on patent structures and so forth in the audit report. [2724]

Q. (By Mr. L. E. Lyon): Did you in your accounting?

A. We cannot determine. As public accountants, we cannot determine what possible liability anybody will have from such a thing as that, on a purchase order, Mr. Lyon, because almost all companies have some sort of contingencies that they are faced with, and the only thing that can be done is to cover such things in a reasonable fashion by explaining in the audit report everything you know that exists.

Q. I place before you Exhibit No. 21. Is there any greater liability stated or did you give any greater consideration to any possible liability as stated by Exhibit No. 21, than is stated by the notice which appears upon the purchase orders of the Standard Oil Company of California, one of which

(Testimony of Roy Bowersock.)

I place before you, and I will ask you to read the patent-liability clause included in the purchase order of the Standard Oil Company of California, which I have placed before you and which starts with the word "Vendor," just read it into the record.

A. (Reading): "Vendor by accepting this order agrees to hold purchaser and its subsidiaries (hereinafter referred to collectively as 'Company') free and harmless from any and all loss, damages, or injury, to defend at its own expense any and all suits or actions, and to pay any judgments against Company, arising out of alleged infringements of patent rights by the whole or any portion of the goods [2725] hereinbelow described."

Q. Now, the question was, did you account for the same liability because of the purchase orders in the Weatherford Spring Company's books as you did for the letter of warranty, Exhibit 21, which I have placed before you?

A. In the purchase order it specifies that any goods sold under that order, the "Company"—in this case it is Standard Oil Company of California—is to be held harmless in connection with patents.

And this indemnity letter is an indemnity letter that somebody presumably—well, the Weatherford Spring Company agrees to hold the Standard Oil Company of California—it is addressed to "Mr. E. J. Toussaint, Producing Department, Standard Oil Company"—and with this letter the Weatherford Spring Company agrees to intervene and prose-

(Testimony of Roy Bowersock.)

cute any infringement suit brought by B and W, Incorporated, against Standard Oil of California or its subsidiaries.

It sounds to me like it is much the same thing.

Q. Well, now, the question was, did you when you were auditing the books of the Weatherford Spring Company—and I believe you did so audit them, did you not?

A. Not the Weatherford Spring Company, no.

Q. Or the books of Mr. Hall?

A. We did audit the books of Weatherford Oil Tool Company. [2726]

Q. How about the books of Mr. Hall?

A. Not as an audit.

Q. And you reviewed them completely?

A. That is right.

Q. (Continuing): Did you find in the books of Mr. Hall and of Weatherford Oil Tool Company, or in either of them, any reserve set up for contingent liability because of the warranties of the character of Plaintiff's Exhibit No. 21 to the Standard Oil Company or to take care of the contingent liability set forth in the purchase orders of the Standard Oil Company as you have just read?

A. No, sir.

Q. All right. Now I will ask you the same question with respect to the California Company, did you find any contingent liability set up on the books of Mr. Hall or the Weatherford Oil Tool Company with respect to any contingent liability growing out of any warranty given to that company, or any lia-

(Testimony of Roy Bowersock.)

bility growing out of the purchase orders which set forth the warranty which you have read into the record with respect to that company?

A. No, sir.

Q. All right. Now I will ask you to read into the record from the rear of the purchase order of the Shell Oil Company the warranty which begins on the reverse of the order and is entitled "(1) Patent Infringement," and read that into the record. [2727]

A. "(1) Patent infringement:

"Contractor agrees to save and indemnify Shell from and against any and all loss, expense, liability and claims of liability arising by reason of the manufacture, sale and/or use of the material or equipment covered hereby, or any process, material or equipment used in the performance of the contract being or being claimed to be an infringement of patent rights held by others."

Q. All right. Now, is your answer the same with respect to any possible liability under this warranty or any letter of indemnification given to the Shell Company, if any, that there was no contingent liability set up on the books of either Mr. Hall or the Weatherford Oil Tool Company?

A. That is right, sir.

Mr. L. E. Lyon: May I request of defendants' (plaintiff's) counsel a stipulation, to avoid going through each one of these companies this same way, that all companies with which these parties dealt, and their purchase orders have now and did

(Testimony of Roy Bowersock.)

throughout the period of time, the precise same notice that has been read from these three different purchase orders, and that that has been true at all times?

Mr. Scofield: I am frank to say I don't know whether they have. I have seen one or [2728] two——

The Court: The question is: Are you willing to stipulate for the purpose of this case?

Mr. Scofield: No, sir, I am not. No, sir. I don't know. I haven't enough information.

Mr. L. E. Lyon: All right.

Q. I will place before you certain purchase orders and documents from the books of B & W, Inc., which I believe were shown to you and you inspected during your review of B & W's books, which are the purchase orders of the Gulf company and deal with the Goldsmith, et al., lease, wells Nos. 596-56 and 598-56, and which have heretofore been marked by me but not by the clerk of the court here as Exhibits FH-1, FH-2, FH-3, and FI-1, FI-2, and FI-3, respectively, there being placed before you the original of those documents as well as the photostatic copy in each case. And I will ask you to look at the reverse side of those purchase orders and read item 10 of the conditions of sale as found on the back of those purchase orders so that it may be transcribed in the record.

A. "Item 10:

"The seller agrees to defend at its expense any

(Testimony of Roy Bowersock.)

and all suits founded on a claim that the goods sold under the order infringe any patent, and the seller agrees to indemnify the purchaser under this order against any judgments and costs resulting [2729] from any such suit."

Q. Assuming that plaintiffs or any of them gave to the Gulf or the Gulf subsidiaries the letter of indemnification, did you find in any of the books that you have audited or reviewed of the plaintiff's or any of them any reserve set up for contingent liability because of the conditions as stated on the purchase order that you read just now into the record or from any such letter of indemnification?

A. No, there was no such contingency reserve set up on the books of either Weatherford Oil Tool Company or Weatherford Spring Company.

Q. When you were examining the books of B & W a question came up with respect to the Goldsmith wells Nos. 596 and 598 of the Goldsmith lease of the Gulf Company. At that time did you examine these documents, FH-1, FH-2, FH-3, and FI-1, FI-2, and FI-3 for identification?

Mr. Scofield: Were they from the Long Beach or the Houston office?

A. Presumably I did examine these. This looks like a copy of B & W's invoice here to Gulf Oil Corporation, dated September 26, 1950; and presumably I did have this invoice in making the analysis. I don't know whether those are some of the invoices that were used in this court testimony or not, but I recall that Mr. Barkis had some in-



(Testimony of Roy Bowersock.)

voices out and it is my understanding that we got them back and we got [2730] them down in the analysis.

Q. (By Mr. L. E. Lyon): This invoice which you have referred to and the one that you had before you is marked FH-3 up in the right-hand corner, is it not? A. That is correct.

Q. And that invoice says: "4 B & W latch-on centralizers—7-inch spiral bow (@ \$32.00) total \$128.00," does it not? A. Correct.

Q. And that identifies not only the fact that a centralizer was sold on that invoice but the type of centralizer, does it not? A. That is correct.

Q. In the next line it says—the invoice calls for "18 B & W Nu-Coil scratchers for 7-inch A.P.I. casing at \$6.45, a total of \$112.50." And that line identifies the fact that there were scratchers sold, does it not, to the Gulf Company on that invoice?

A. Yes, sir; that there was scratchers.

Q. And it identifies the fact that the scratchers that were sold were Nu-Coil scratchers, does it not?

A. That is correct.

Q. And is not this invoice, Exhibit FH-3 for identification, typical of all of the invoices which you examined of B & W in that they identify the precise structure as to the type of scratcher and the type of centralizer in each [2731] and every case?

A. I would hate to go out on a limb and say it identifies it exactly. For example, on this B & W



(Testimony of Roy Bowersock.)

latch-on centralizer I don't know whether it is a spiral or a straight centralizer.

Q. You don't?

A. Oh, yes. It says "spiral bow." That is right. And in most cases I recall that they identify the scratchers and centralizers. We were not particularly interested in the particular type of centralizer or scratcher.

Q. Would you say or can you recall any invoice that you examined of the B & W which did not specify the type of centralizer as to spiral, straight, or concave bow, or the type of scratcher as to whether it was a Nu-Coil, Multiflex, rotary scratcher, or a wall-cleaning guide?

A. I don't recall. I don't recall any at this time, Mr. Lyon, but I would hate to say that there absolutely was not any because I really was not looking for it.

Q. All right.

A. If it had been marked just "centralizers" or "scratchers," why, we probably would have picked it up without too much notice. I would say if there had been very much of one thing or another, we would probably have seen it.

Q. As to FH-2, Mr. Bowersock, the document marked up in the right-hand corner "FH-2 for identification," that [2732] is what you have referred to on your direct examination as a delivery ticket, is it not?      A. Yes, sir.

Q. And that delivery ticket is signed for on behalf of the Gulf Company by whom?

(Testimony of Roy Bowersock.)

A. It appears to be "C. F. Fisher," or maybe it is C. H. Fisher.

Q. And it is signed for on behalf of the person who delivered it by whom?

A. By A. G. Flowers.

Q. A. J.?           A. A. J. Flowers.

Q. It may be "G"—I don't know. All right. Now, that delivery ticket identifies the structures which were delivered to the Gulf Company at the Goldsmith lease at that time as what? 4 7-inch B & W spiral bow latch-on centralizers; 18 7-inch B & W Nu-Coil scratchers. [2733]

\* \* \*

Q. (By Mr. L. E. Lyon): Would you read from the face of Exhibit FH-2 for identification, Mr. Bowersock, the designation of the well to which that equipment was delivered?

A. It says: "Field delivery receipt to well No.," and the name is "Goldsmith No. 596-56, district West Texas."

Q. What is the date of that invoice?

A. This delivery receipt is "8-31-50."

Q. That is on FH-2, is it not? Talking from FH-1, what is FH-1?

A. FH-1 is the purchase order of Gulf Oil Corporation, Ft. Worth Production Division.

Q. And where does it call for the material to be [2734] delivered and by what method?

A. Calls for "4 7-inch B & W spiral bow latch-on centralizers and 18 7-inch B & W Nu-Coil

(Testimony of Roy Bowersock.)

scratchers. Ship to Gulf Oil Corporation, Ft. Worth Production Division, destination Goldsmith, Texas, care of D. Moore, Vendor's care." And at the bottom it says: "Confirming 8-31-50. Charge 28-3996-058-700024 C. A. Goldsmith, et al., No. 596-56 (install centralizers and scratchers)."

Q. Do you understand what it means on the end there: "install centralizers and scratchers"? Is that a direction to the vendor to install the structure on the casing?

A. Presumably it is. It would mean that B & W was to install them. [2735]

\* \* \*

Q. From what data was this chart, Exhibit 175-D, prepared, Mr. Bowersock?

A. It was prepared from copies of Import Tool Company's invoices and delivery tickets.

Q. And what else?

A. Do you mean by way of purchase orders and that sort of thing? They would not have any bearing on it. It was prepared from copies of invoices of the Import Tool Company.

Q. And the invoices of the Import Tool Company were supplemented by delivery tickets, were they?

A. Yes, sir.

Q. And those delivery tickets, in many cases, were supplemented by purchase orders from the Gulf Oil Company, were they not?

A. Undoubtedly, yes, sir.

Q. And that is the material that this material of Exhibit 175-D was compiled from, is it not?

(Testimony of Roy Bowersock.)

A. Yes, sir.

Q. And in many cases the material that is on here, and [2744] the designation of the fact that it was a Gulf purchase, came by letter from some representative of Weatherford, Ltd., in Canada, is that correct?

A. With respect to certain wells that were indicated by the well number only, that information that those were actually Canadian Gulf was gotten by letter to Fred Drury, who previously testified in this court, from Canada, and that letter is in the exhibits, the detail, and I don't know what the exhibit number is but I believe it is 175-C and it is listed as page 9 of that detail.

Q. Did you personally see any of the records to which Mr. Drury refers in his letter, Exhibit 175-C for identification?

A. Say that over again.

Q. Did you personally ever see any of the records which Mr. Drury refers to in his letter, Exhibit 175-C, and by which he says that he identifies the wells as being Gulf wells?

A. No, I did not.

Q. No such records, to your knowledge, were ever available here in the United States, then, is that correct?

A. No, I have no way of knowing whether there is any available any place or not. At least all I did was write to Mr. Drury and ask him to ascertain whether or not those were Gulf wells, and he reported in the letter that I have enclosed [2745] and he indicated the ones that were Canadian Gulf.

(Testimony of Roy Bowersock.)

We crossed out all the others that were not Canadian Gulf.

Q. On this chart on which you have scratcher sales, Exhibit 175-D—will you place at the proper point on that chart the date “March 13, 1951,” and following that will you write “Canadian Reissue Patent No. 472,221,” make those entries on your chart?

A. May I have that, what I was to write, repeated?

Q. “March 13, 1951.” A. Yes.

Q. Write that date, “March 13, 1951,” and write “Canadian Reissue Patent No. 472,221.”

Mr. Scofield: Would you supplement the exhibit number, too, Mr. Lyon?

Mr. Lyon: What is the exhibit number of that?

Mr. Scofield: It is Q-1.

Mr. L. E. Lyon: Q-1. All right. I will be glad to have him put “Q-1” on there also.

(Witness writes on chart.)

Q. (By Mr. L. E. Lyon): Now, at approximately that same date will you mark on there “Gulf Patent Department examines Canadian reissue patent”?

(Witness writes on chart.)

Q. And put after that “Houghton deposition, Exhibit 92, page 11.” [2746]

A. What was the page number again, please?

Q. Exhibit 92, page 11.

(Testimony of Roy Bowersock.)

A. Oh, Exhibit 92.

(Witness writes on chart.)

Q. Now will you mark out there the date, "April 3, 1951," and write "Letter to Houghton with claims of reissue patent, Exhibit 73"?

(Witness writes on chart.)

Q. Now, following that, or about the date of May, 1951, will you write "Houghton letter, Exhibit 76. Houghton deposition, Wright and Barkis have not asserted Canadian patent but could do so, Exhibit 92, pages 23, 24"?

\* \* \*

Q. (By Mr. L. E. Lyon): What have you written?

A. I wrote "Houghton letter, Exhibit 76, Houghton deposition, Wright"—

Q. Just put "Houghton deposition, Exhibit 92, pages 23, 24," then, and leave the interpretation out. [2747]

\* \* \*

Q. Does your examination of the books show that as to particular oil companies there will be a wide fluctuation as to dollar value of sales from month to month?

Mr. Scofield: I object to that unless the oil companies are identified.

Q. (By Mr. L. E. Lyon, continued): The oil companies on which you have prepared the charts.

A. If you place before me all of these charts

(Testimony of Roy Bowersock.)

of all the companies here, I will tell you what the fluctuations are between each one. I have in front of me this B and W, Incorporated, sales to Gulf and, for example, it fluctuates in the month of February, 1948, from something above \$500 down to nothing, for three or four months.

And then coming into July of 1948 there are sales and [2768] then there is nothing, and the next couple of months with sales of over \$1,500, and it fluctuates down to less than \$500 for about three months.

Now, I would call that considerable fluctuation. However, a similar amount of fluctuation in dollar value on a company that had lesser sales would not—I mean that had greater total sales, would not be so important. This is proportionately. From one month to the next it may fluctuate quite considerably, some of these months even on this particular scratcher chart of B and W sales to Gulf Oil Corporation, in the month of March, 1951, there were no sales, and yet in the two months adjacent to it there were sizable sales, I would say, above \$1,500 in one month and \$2,500 in the next month.

Upon the over-all charts you can see a general pattern as to the trend of the sales.

Q. Now, did your examination of the books of these companies show any reasons for these wide fluctuations?

A. No, sir. My examination was just confined to getting the facts with respect to the sales and not as to why they did occur.

(Testimony of Roy Bowersock.)

Q. Did your examination of the books of these different companies show that the purchases were made for warehouse stocking in any case, for stocking the equipment in warehouses? [2769]

A. You mean did the examination show that Gulf Oil group bought some equipment to stock their warehouses?

Q. Yes.

A. No. We had no such information.

Q. You had no such information?

A. No, sir.

Q. Did your examination of the books of Gulf Oil Company show you with respect to purchase of scratchers from Weatherford Spring Company that Gulf had in fact over-purchased for a considerable period of time on scratchers, beyond their requirements?

A. No, I would not have known that. [2770]

\* \* \*

Mr. L. E. Lyon: I think the books in a case of this kind, account books, are those made before the original records, such as invoices and delivery tickets, which they have had by their own admission, your Honor, and that is what I mean by "books."

The Court: You are asking, in effect, if any books he saw in the course of his examination indicated to him any reason or indicated to him any over-purchases?

Mr. L. E. Lyon: Yes, for particular periods of time.



(Testimony of Roy Bowersock.)

The Court: By "over-purchasing," I take it you mean purchasing beyond normal?

Mr. L. E. Lyon: Beyond their immediate requirements.

The Court: Or normal requirements. You may answer.

A. We were not interested in what disposition was made of the goods. We would not know whether they over-bought or not. There may have been some—we did have credit memorandums coming through.

The Court: The question is whether you saw anything that indicated to you that there had been any such over-purchasing or unusual purchasing—purchasing beyond normal requirements at any time over the period of your examination. Is that the question?

Mr. L. E. Lyon: Yes, your Honor.

Mr. Scofield: By their question——

A. No, we would not have known. [2772]

The Court: Your answer is "no"?

The Witness: That is right. We have no indication.

Q. (By Mr. L. E. Lyon): You stated that you saw credit memorandums. Were those credit memorandums which were issued and requested for return merchandise? A. Some of them.

Q. Why was the merchandise returned?

A. Well——

Q. Do you know? Did the records show?

A. No. I wouldn't have been interested in it,

(Testimony of Roy Bowersock.)

anyway. We were just interested in getting the correct amount of sales. We took the credit memorandums into account, and that is simply the total interest that we had in the credit memorandums. We neither had the time nor did we want to go into all the reasons as to why merchandise was returned.

Q. How long have you been engaged in examining the books of the Weatherford interests and Mr. Hall's in connection with this matter, Mr. Bowersock?

A. In connection—may I have an explanation of your question, in connection with what matter?

Q. When did you first look at the books of any party to this action for any reason with respect to the sale of scratchers and centralizers?

A. I am still not too sure that I understand your question. I will state what I think your question to be and [2773] reply to that. If I understand your question as to when I first came in contact with either Mr. Hall, Weatherford Spring or Weatherford Oil Tool, my first contact was in 1951, in May, when we came in for preliminary examination preparatory to the audit of June 30 of Weatherford Oil Tool Company. That, however—

Q. June 30th of what year?                   A. 1951.

Q. 1951. How long were you engaged in making that audit of those books of the Weatherford Oil Tool Company?

(Testimony of Roy Bowersock.)

A. At that particular time, approximately three months.

Q. After you finished the audit of the books of Weatherford Oil Tool Company, then when did you next have any contact with any of the accounting records of any of the parties to this action?

A. Oh, gosh, I don't remember exactly.

Q. Was it recently?

A. I have worked off and on, I think, ever since that time.

Q. Ever since?

A. I would say, off and on, we have had either audits or tax returns for Mr. Hall, who is a party to this action, as I understand your question. So with respect to one phase or the other, I would say that a third of my time was spent [2774] from that time until I took employment with Mr. Hall in January of 1953.

Q. During that period of time from June of 1951, to date you have never had time to find out why these credit memorandums were issued, is that your position?

A. Mr. Lyon, in making an audit of the books of the company I would not be interested in why credit memorandums were issued, nor am I interested nor have I ever been interested in establishing the policies of Weatherford Oil Tool Company or Weatherford Spring Company. That is the company's business. And auditor has nothing to do with such things as that.

Q. Why did you make these accounting surveys?

(Testimony of Roy Bowersock.)

Isn't it for the purpose of determining the amount of royalty that Mr. Hall might be entitled to receive?      A. No, sir.

Q. In no case?      A. No, sir.

Q. You never made any determination of that?

A. Did I ever make any determination of the royalty that Mr. Hall might be entitled to receive from Weatherford Oil Tool Company, you mean?

Q. Or from any other plaintiff organizations?

Mr. Scofield: I object to that, your Honor.

A. No. It was not entailed—— [2775]

Mr. Scofield: It is entirely outside the direct examination. There has been no examination of this witness with regard to the royalties due Mr. Hall. I can't see that it is material at all to this case.

Mr. L. E. Lyon: It is material to this determination, your Honor. This witness has been placed on the stand as one who has for many years been acquainted with and has testified to the fact that he has been keeping these books for this period of time, and also as to his qualifications. He has testified that he is acquainted with credit receipts but he does not know why they were issued or what for.

I think we are entitled to know what they are for if this witness knows, and I am examining the witness in that regard.

The Court: Please read the question, Mr. Reporter?

(Question read by the reporter.)

The Court: Overruled. You may answer. Do you understand the question?

(Testimony of Roy Bowersock.)

The Witness: Again, I try to clarify the question.

The Court: I understand the question is: Did you ever make any determination of the royalty Mr. Hall, Sr., was entitled to receive from Weatherford Tool Company or any other organization of plaintiffs here in this action? Is that the question?

Mr. L. E. Lyon: Yes, your Honor. [2776]

The Court: It seems to me you might answer that yes or no.

A. Why, I certainly—I will answer yes, but I want to clarify my answer.

The Court: You may explain your answer.

A. We verified the royalties accrued on the books of the companies to see that they were in accordance with the contracts with Mr. Hall. And your question as to whether I made a determination, it sounds like did I compute them and tell them to pay these royalties? No, but we verified what was done and, if there was any incorrectness about it. We corrected the records, or at least corrected our audit report to that extent.

Q. (By Mr. L. E. Lyon): In making that verification, as you have termed it, did you determine and consider returned goods for which credit memorandums were issued?

A. Well, if the royalties were based on sales, we did that.

Q. I am not asking you about "if." I am asking did you do it?

A. I certainly wouldn't know why the goods

(Testimony of Roy Bowersock.)

were returned, Mr. Lyon, even if I had done it. I don't remember whether we took into consideration—we took into consideration the net sales on any computation we made with respect to sales, whether it be on Mr. Hall's royalties or any [2777] other matters. I mean by that, less returned goods and other credit memorandums, etc., but I certainly wouldn't say that I went into the detail of every credit memorandum to see what it was for, and I wouldn't now remember even if I did.

Q. My question is—and you are trying to anticipate, Mr. Bowersock—did you determine why goods were returned, to determine whether a royalty should be charged or should not be charged?

A. I will say no, because I am sure that I did not, but I don't remember. I will say no, I didn't do it.

Q. In the chart which you have prepared of the scratcher sales made by Weatherford—and I presume it is in gross because you do not show on these charts which company it was made those sales, do you?

A. No, sir. You are talking about Weatherford sales?

Q. Yes.

Mr. Scofield: What exhibit, please?

Q. (By Mr. L. E. Lyon): Do you find any indication that you can point out either from that chart or the chart of the summary of sales of scratchers made by B & W to Gulf any accounting

(Testimony of Roy Bowersock.)

indication of any kind that these Weatherford Companies lost sales to B & W?

A. I don't have the Weatherford charts in front of me.

Q. I will place them in front of you. [2778]

Mr. Scofield: Read the question, please.

(Question read by the reporter.)

Mr. Scofield: Now, that is the same question that we had before. He is now asked to give his opinion as to whether or not they lost sales as charged. He has testified only as to the facts of these sales and it is not for him to interpret here whether or not they lost sales. I think that is your Honor's province.

The Court: Sustained.

Q. (By Mr. L. E. Lyon): I have placed before you the chart, which I believe was prepared under your supervision, entitled "Dollar value of scratcher sales made by Weatherford Spring Company of Texas and Weatherford Oil Tool Company, Inc., to Gulf Oil Corporation and subsidiaries in the United States." I do not have the notation of what exhibit number that is here. I should have it. 177-A or -B is the key to it. Which was it, the scratchers?

Mr. Scofield: The scratchers is A.

Mr. L. E. Lyon: 177-A. May I have it to avoid any question? All right. We will say that it is 177-A and try to get on.

Q. Now, that chart, 177-A, shows a fluctuation in sales of Weatherford Spring Companies' sale of



(Testimony of Roy Bowersock.)

scratchers to Gulf Oil Corporation and subsidiaries by months. Is there anything shown by the books, the documents that you [2779] examined, of either the Weatherford Spring Company or the Weatherford Oil Tool Company, Inc., that shows any reason for those fluctuations.

A. So far as the fluctuations were concerned and so far as the reasons for the fluctuations is concerned I wouldn't know. In making this analysis we were not interested in the reason why. We were just interested in developing the figures.

Q. Then your answer is that you found nothing and nothing was called to your attention which showed any reason for those fluctuations on Exhibit 177-A, is that correct?

A. That is correct. And I was not interested in asking for any reasons or looking up any [2780] reasons.

\* \* \*

Mr. L. E. Lyon: That is correct, your Honor, and I would agree with you. But here, your Honor, they have taken the position that they lost sales and we gained them.

Now, can he as an accountant show me anywhere from [2782] either of these charts where there is an indication that any sales were lost by any of the Weatherford companies or any gained by B & W? Now, that is his duty, his position as an [2783] accountant

\* \* \*

The Court: Very well. You understand, Mr. Scofield, what the charts are that are here in evi-



(Testimony of Roy Bowersock.)

dence. Now, we will take an adjournment at this time. You understand the purport of the question, I take it, that will be asked him with respect to each one of these six companies, is that it?

Mr. L. E. Lyon: That is correct. [2785]

\* \* \*

### Cross-Examination

(Resumed)

By Mr. L. E. Lyon:

Q. Mr. Bowersock, in compiling any of these charts which have been compiled under your direction, which start with Exhibit 175-A and runs through the series to 180-A, I believe is the last one, have you taken in any way into consideration with respect to any of these oil companies the scratchers and centralizers that any of those oil companies may have purchased from other companies other than B & W or Weatherford?

A. Yes, sir. In the case of Canadian Gulf it is a purchase from Weatherford, Ltd., or a purchase from Import [2793] Tool or through supply stores, if that is what you mean. We only took into consideration B & W scratchers and centralizers and Weatherford scratchers and centralizers.

Q. You did not take into consideration Baker scratchers or centralizers? A. No.

Q. Larkin centralizers, Halliburton scratchers and centralizers, or any of the other companies that were in the business of manufacturing and selling

(Testimony of Roy Bowersock.)

and distributing scratchers and centralizers, did you?      A. No.

Q. When you came to making up these charts or summaries with respect to the Texas Company why didn't you follow the same practice as you did with respect to the other oil companies of tabulating and charting the sales of both scratchers and centralizers, and not restrict your charting with respect to the Texas Company to scratchers only?

A. That was my instructions, sir.

Q. Who gave you that instruction?

A. Mr. Scofield.

Q. Do you know any reason why?

A. No, sir.

Q. Then the only thing that you know is that you were instructed with respect to that not to tabulate centralizers?

A. That is correct; scratchers only.

Q. But as far as the five other companies were concerned [2794] you were told to tabulate both scratchers and centralizers, is that correct?

A. With some limitations. For example, on Amerada we took the California sales only. That, again, was by Mr. Scofield's instructions.

Q. Do you know any reason for that?

A. No, sir.

Q. All right. Any other exceptions?

A. No, I believe that is all.

Q. Do you know whether Weatherford now sells or at any time has sold centralizers to the Texas Company?

(Testimony of Roy Bowersock.)

A. Do I know whether Weatherford—

Q. Has now or at any time has sold centralizers to the Texas Company?

A. I am sure they have.

Q. What is that? A. Yes. Yes.

Q. Do you know whether they are now selling scratchers or centralizers—I mean centralizers to the Texas Company? A. I think they are.

Q. Then, as far as you know there was absolutely no reason whatsoever for the instruction to eliminate the centralizers as far as the Texas Company is concerned?

A. That is right. I don't know what the reason was.

Q. Do you know whether the Weatherford companies or [2795] any of them sell scratchers and centralizers to Amerada outside of the State of California? A. Yes, sir; I know they do.

Q. Then as far as you are concerned there is no possible reason you can see for restricting the tabulation to California with respect to that company, is that right?

A. Oh, I can see a lot of possibilities, but I don't know what the reason was.

Q. In these tabulations with respect to the Standard Oil Company of California and the Texas Company in California, I believe you found invoices for a scratchalizer sold by B & W to those companies, did you not? A. That is correct.

Q. Do you understand what that scratchalizer was?

(Testimony of Roy Bowersock.)

A. I have a pretty good idea. I haven't seen one but I have a pretty good idea.

Mr. L. E. Lyon: For the purpose of identification, if it may be stipulated that the scratchalizer is that structure shown upon page 7 of this B & W catalogue which carries the printer's notation "152"?

Will you look at page 7 and see if that is what you understand to be a scratchalizer?

Mr. Scofield: That will be stipulated, your Honor.

The Court: Stipulated that it does depict one, is that it? [2796]

Mr. Scofield: Yes, sir.

The Court: Do you accept the stipulation?

Mr. L. E. Lyon: I will accept the stipulation. And I will ask that page 7, particularly, of this catalogue which I just handed to the witness be received in evidence, particularly that portion of the catalogue which refers to B & W scratchalizers and has a picture of the scratchalizer in Figure 24, as the Defendants' Exhibit. What is it?

The Court: Has the entire document been marked as yet?

Mr. L. E. Lyon: None of it has been marked before, your Honor.

The Court: Is it Defendants' Exhibit next in order?

Mr. L. E. Lyon: It is next in order, except for these that I just gave him to mark, your Honor.

(Testimony of Roy Bowersock.)

Mr. Scofield: Can it also be stipulated in connection with that exhibit—

The Court: Let us mark it first.

Mr. Scofield: All right.

Mr. L. E. Lyon: FR. Mark it FR.

The Court: Is there an FQ?

Mr. L. E. Lyon: I am sure there was yesterday.

The Court: According to my notes the last one marked yesterday was FP.

Mr. L. E. Lyon: FP. All right, FR, and I will put in FQ in just a minute, which is a missing sample of the Standard [2797] Oil Company of California purchase order which has the notice on it, your Honor. I would rather reserve FQ for that purpose to keep them together.

The Court: Very well. Then page 7 showing the scratchalizer will be marked in evidence as Defendants' Exhibit FR, is that it?

\* \* \*

Mr. L. E. Lyon: As shown in Figure 24 of FR the scratcher fingers are of the Multiflex finger type.

Q. That structure of scratchalizer as shown in Exhibit FR, Figure 24, is combined with a scratcher and centralizer, is it not? A. That is correct.

Q. You separated the sales of scratchers and centralizers to the Standard Oil Company and charted the sales separately, did you not, as to scratchers and centralizers? [2798] A. Yes, sir.

Q. And did that by dollar volume?

(Testimony of Roy Bowersock.)

A. That is right; and we did it on any place where we found the sale of a scratchalizer.

Q. Where did you put the scratchalizers, either centralizers or the scratchers or in both?

A. We put them in both.

Q. I see. So that, then, you have a duplication in the Texas Company and Standard Oil Company of California sales of the scratchalizers, both in the centralizer sales and in the scratcher sales, is that correct?

A. No, sir.

\* \* \*

A. I believe I confused the issue on my previous answer. We split up the scratchalizer, the selling price of [2799] the scratchalizer, as between scratchers and centralizers and included a portion in each. Mr. Knapp and myself arrived at what we thought was a fair way of splitting that up, by taking list value of the two scratchers and the list value of the centralizer, and then I have forgotten now what the percentage was, but we applied that universally throughout and split the sale of a scratchalizer to both scratchers and centralizers.

Q. (By Mr. L. E. Lyon): I don't believe that I completely get just straight what you mean. You mean you took something like 60 per cent of the total sale of the scratchalizer and applied that 60 per cent of the sale to centralizers and the other 40 per cent to scratchers, is that correct?

A. That is correct.

Q. You did not include the 100 per cent of the

(Testimony of Roy Bowersock.)

sale in the centralizer column or the 100 per cent in the scratcher column?      A. That is correct.

Q. And the only justification that you had for that split was not with regard to cost in any way, but merely with respect to what you say the list price was?      A. B & W's list.

Q. Of scratchers and centralizers, is that it?

A. That is right; B & W's list price. [2800]

Mr. L. E. Lyon: At this time, your Honor, I will ask the clerk to mark, so that the record will be straight, as Exhibit FQ, photostatic copy of the purchase order of Standard Oil Company which was referred to yesterday during the taking of testimony of this witness, it being the purchase order of the Standard Oil Company of August 9, 1947, directed to B and W, Inc., and which has in it the patent notice which this witness read into the record.

The Court: It will be so marked. The last exhibit is Defendants' Exhibit FQ?

Mr. L. E. Lyon: Yes, your Honor.

(The document referred to was marked Defendants' Exhibit FQ for identification.)

The Court: And it is not offered in evidence at this time?

Mr. L. E. Lyon: No. It is marked for identification, just to keep the matter straight.

Q. Mr. Bowersock, I am going to place before you the charts which you have prepared or which have been prepared under your supervision with respect to the California Company, which include

(Testimony of Roy Bowersock.)

Exhibits 178-A, 178-B, 178-D, and 178-E. Do you have copies of them before you?

A. Yes, sir. I have the negatives of those.

Q. You have the negatives. At the adjournment of the proceeding last evening you were requested to be prepared to [2801] point out from the charts any indication that you can find from those charts of sales lost by the Weatherford companies, as they are designated on these charts, and which were gained by B and W, in respect to the charts which I have particularly directed your attention to. Now, I will ask you to answer that question, and that is the charts with respect to the California Company.

A. In the case of the California Company, so far as the charts are concerned, taking the Weatherford charts, Exhibits 178-A and 178-B, they reflect a sale of scratchers and centralizers, not large, but some sporadic sales up through 1948, half into—even into 1949, and no sales whatever from March, 1950, through April of 1951, and then a pickup of a few scratcher sales, sporadic, over until November of 1952, at which time a more healthy business comes in.

And in the case of centralizers, a few more during 1951 and up, and they become solid from about July of 1952 for the balance of the period.

B and W to this company had very sporadic sales, and the charts do not reflect sales of any consequence until November of 1952, and the same with both



(Testimony of Roy Bowersock.)

scratchers and centralizers, except for a few centralizer sales in 1951.

Mr. L. E. Lyon: Just kindly answer the question.

Mr. Scofield: Please let him finish his answer.

Mr. L. E. Lyon: Your Honor, he is referring to the [2802] charts. We can see what is on the charts.

Q. The question is, will you point out any sales, as shown by these charts, that were lost by the Weatherford companies and gained by B and W? Will you do that?

A. In respect to this particular company, the charts do not reflect clearly any such loss and gain.

The Court: It is a matter of interpretation, isn't it?

The Witness: Well, these charts do not reflect that anybody got very much business and they don't reflect—certainly you couldn't say that B and W got very much business during this period up prior to November of 1952, less than \$500 in any month, of either scratchers or centralizers. On the other hand, you can say that you can see that Weatherford was starting to get some business, it was having some sporadic sales until in 1950 when it ceased to have any, and then again it picked up in the latter part of the period.

That is about all you can say insofar as the charts show of loss.

Q. (By Mr. L. E. Lyon): You pointed out that Weatherford had practically no sales in 1950 of either scratchers or centralizers. You said prac-

(Testimony of Roy Bowersock.)

tically none, which is true, but as far as B and W is concerned, the charts show that they had no business of any kind in that year, don't they?

A. That is correct.

Q. So that your answer, insofar as your analysis of [2803] this matter and these charts is concerned, as far as the California Company is concerned, they don't show any loss of business by the Weatherford Company and a gain of that loss by B and W, is that correct?

A. That is right, insofar as the charts are concerned, this particular company.

Q. I will ask you to place before yourself the charts which you have prepared of the Union Producing Company, which are Exhibits 176-A, 176-B, 176-C, 176-E, 176-F, 176-G, 176-H, and 176-I, and I will ask you to add to the same question to show from these charts any loss of business of the Weatherford Spring Company that was gained by B and W.

And, Mr. Bowersock, do you have on the negatives the exhibit numbers?

A. Yes, sir, I have them.

Q. The reason I ask you that is, I would like, when you are referring to one of these charts in any of your answers, if you would kindly refer at the same time to the exhibit number so that the record will be clear as to what you are talking from.

A. All right.

This question is best answered by referring to Exhibits 176-H and 176-I, which were prepared ex-

(Testimony of Roy Bowersock.)

clusively to show what the condition was of the sales between one company as compared to the [2804] other.

On Exhibit 176-H it shows the sales of scratchers by both B and W and Weatherford and it shows quite clearly that up until January, 1949, Weatherford had all of the business, there was no B and W business at all.

The Court: I don't like to interrupt the witness, but isn't that a matter of argument from the charts? Can't any school child see that from the charts?

Mr. L. E. Lyon: That is correct, your Honor, but that is not my purpose. I am not asking him to testify what the charts are, but to point out from these charts—because it becomes critical and I am going to ask him if he says any date, because that will crystallize this issue, and with respect to this particular case here I am going to refer to the depositions of the Union Producing Company which show that on January 18, 1950, Mr. Quigles in charge entered an order that no more Weatherford material was to be purchased because, he said, "You called me and took my deposition and involved me in this litigation," to Mr. Scofield, and said, "because of that I am not going to buy any more material from you."

The Court: Mr. Lyon, what purpose does this witness serve in a situation of this kind? He took all the figures, and the defendants will contend that the figures are the result of a certain consequence, and I take it that the plaintiffs will contend that

(Testimony of Roy Bowersock.)

these changes are the [2805] consequences of other events.

Mr. Scofield: That is right.

The Court: The charts, as I see them, speak for themselves if the figures are correct; no amount of opinion on those charts would change my view of it, very frankly speaking. The question in my mind would be, what caused this thing to happen?

Mr. L. E. Lyon: That is correct.

The Court: And on that I take it that this witness doesn't know any more about it than I do.

Mr. L. E. Lyon: But from an accounting standpoint, your Honor, there is a point at which this chart must show some break or must show some change of conditions. I am trying to get first at that point where this witness as an accountant would say that there was some cause or effect there that would cause a change in business.

The Court: If he knows of any. I mean he wouldn't know it as an accountant. He would know it as an employee of the business probably.

Mr. L. E. Lyon: Well, from an accounting standpoint, he could say that there was a rapid business change here that was caused by some turn or effect other than ordinary business.

The Court: Well, we can look at the chart and see what happened, assuming that the chart is correct, but he cannot [2806] look at the chart and tell what caused it to happen.

Mr. L. E. Lyon: No, I am not asking him what

(Testimony of Roy Bowersock.)

caused it to happen. I am asking him where there was a cause.

The Court: If he knows of any.

Mr. L. E. Lyon: No. I mean as an accounting record. This man is an accountant, and there are business fluctuations that we all recognize at all times. Now, is there something shown by these charts that he can point out to us that is unusual, as an accountant, which he can say is out of the ordinary loss of business by one company and a gain by the other? That is the question. Otherwise I don't feel that I am—there are seasonal matters, there are matters in Canada where there are frozen-out drilling conditions, where they are almost stopped, I don't know, even a cutoff of sales, and it wouldn't show anything to me, and that is not merely argument.

The Court: But he cannot tell you that, can he?

Mr. L. E. Lyon: He knows as an accountant. He is employed a hundred per cent of the time by this company.

The Court: Are you asking him about conditions generally?

Mr. L. E. Lyon: I am asking him one simple question: Can he as an accountant, and being familiar with this business, point out to me anything shown by these charts which he will say shows a loss of sales by Weatherford as against ordinary sales change and a gain of that sale by B and W? Now, that [2807] is different and that is taking the matter of interpretation, which is very dangerous, out

(Testimony of Roy Bowersock.)

of my hands and out of the court's hands into the hands of a presumed expert to tell us, so that he can say that in ordinary business condition changes—that he can say that these charts, as an accountant, show a loss of business which would not have been lost by ordinary business conditions and gained by the other.

The Court: He can't know that. He isn't competent to say that. That isn't an accountant's problem. That might be an executive's problem. But I doubt very much if it is even the subject matter of opinion testimony.

Here we can see what the charts show. Query: What caused it? That is not an accountant's problem. What caused it? Unless he happens to know from the facts by reason of his connection with the plaintiff, and I take it that he has told us he doesn't know any facts about it, as to what caused it, of his own knowledge.

Mr. L. E. Lyon: Well, I didn't so understand his testimony.

The Court: Whatever the charts show are the results of figures. Now, it has not been shown that he knows anything about who gets the business and who loses it and how it is gotten and how it is lost. All he does is record the results of those happenings.

Mr. L. E. Lyon: All right. Then, taking it from that [2808] standpoint and no showing that there is any connection from one to the other, all the charts and all the testimony with reference thereto are immaterial, they have not been connected up in any

(Testimony of Roy Bowersock.)

way, unless it is presumed that they are connected in some way through this witness.

The Court: It may be. The question remains, What caused to happen what did happen? But this witness isn't competent to express an opinion on that, I take it.

Mr. L. E. Lyon: If that is the court's ruling, that this witness is not competent to construe these charts insofar as with respect to any showing of loss by one and gain by the other, I will abide by the court's ruling.

The Court: If you point out to me anything on these charts that needs construing by an expert, I will be glad to have it. Perhaps I do not understand them at all, but to me they are simple enough for a high school student to understand.

Mr. L. E. Lyon: It is not my province to assume that the court understands these charts. In fact, I would hate to say I can understand them. I would hate to say that I can understand the loss of sales and form an accurate determination of cause and effect through a period of time where it shows we have had no sales.

The Court: Well, if you are talking about the over-all business, that is one thing, Mr. Lyon. If you are speaking [2809] about certain accounts, that is another. As I understand, the plaintiff's theory is this: that it had a customer A and that it was doing business with this customer and that B and W, by unfair business practices, took the business away, and as I understand it these charts are



(Testimony of Roy Bowersock.)

designed or intended to show that one day or in one month or in one year the plaintiffs had that customer, had that account, and then the next year the B and W had that account, and the plaintiffs did not have it.

Now, that doesn't prove everything that the plaintiffs will have to prove, of course. The presumption is that those transactions were fair and that the ordinary course of business has been followed and that the law has been obeyed.

Now, how did the defendants get the business? They may have gotten it through a myriad of circumstances. They may have gotten it by better salesmanship, by having a superior product, or by personality or by reason of any number of circumstances. They might have gotten it, as the plaintiffs contend, by unfair trade practices. But there is nothing in these charts, I take it, that the plaintiff even contends shows what happened as far as causing the figures to change, is there?

Mr. Scofield: You are absolutely correct, your Honor. I do not think the charts show at all any unfair trade practice or any reason. Just as you say, they show that there [2810] was certain business had by Weatherford or B and W and that after that date the business went elsewhere. Now, where it went, we still got to prove, and that it was an unfair trade practice. For instance, in the case of this Union Producing Company, the very charts he has before him, that is, we had the business up to a



(Testimony of Roy Bowersock.)

certain date and there was a period then that they had all the business and we had none. Now, we still have to prove why that change took place.

The Court: Well, I recall that one of the charts indicates you got it back again.

Mr. Scofield: That is right.

The Court: Now, the plaintiffs may have gotten it back again by an unfair trade practice.

Mr. Scofield: That is right.

The Court: For all I know, at this stage of the case, but the chart would not help us, I take it.

Mr. Scofield: Except to show what happened to that particular account.

The Court: And when you talk about a loss of business, I think you must speak of it with more specificity, because it may not be a loss of general business but a loss of accounts.

Mr. L. E. Lyon: With that understanding, it is not my desire to unnecessarily prolong this, because I am trying to bring out and crystallize from this evidence the facts and I [2811] think they have been crystallized by this examination, that these charts in themselves prove nothing, as it is now admitted, and they are a set of figures and they have not been connected in any way at the present time.

The Court: Well, if they are connected in any way, let us put it this way: they are connected but to the witness and not by the charts themselves and not by what this witness says or proposes to say.

I sometimes wonder how either one of these people would have any business left, after all this

(Testimony of Roy Bowersock.)

litigation. It may be that these accounts jump from one side to the other through gambling on who is going to win this lawsuit.

Mr. L. E. Lyon: I think, if your Honor please, if I might digress a little bit there, it will show maybe a major effect upon the change of business for one of the companies to go and make a statement, as in the case of Union Producing Company, and drag in a customer into the matter, and the customer says, "I won't buy from you any more," and that is what happened, I was pointing out, in connection with the Union Producing [2812] Company.

Weatherford brought in their people, took their depositions, made them, as they said, a party to the action; and they said: Now, that they have done that, we won't buy from you any more. Certainly that it no unfair competition on our behalf.

The Court: That is a matter of argument.

Mr. L. E. Lyon: Yes.

The Court: I would be more inclined to be surprised by a customer who would buy from either one of them if he had any alternative.

Mr. L. E. Lyon: That is one of the factors I want this evidence to show, that these charts do not show how much of the business was transferred to Halliburton, Larkin or Baker because of the acts.

The Court: Of course, that is a matter of the weight.

Mr. L. E. Lyon: Yes, that is a matter of the weight of the testimony. That being true and in

(Testimony of Roy Bowersock.)

view of your Honor's ruling, I will forego further cross-examination of this witness. [2813]

\* \* \*

BRUCE BARKIS

(Recalled)

\* \* \*

Cross-Examination

By Mr. L. E. Lyon:

Q. Mr. Barkis, I place before you documents which have heretofore been marked for identification as Exhibits FI-1, FI-2, and FI-3, and FH-1, FH-2, and FH-3.

At this time, in lieu of the originals, I would like to have leave to substitute photostatic copies for the originals of these records, if there is no objection.

Mr. Scofield: There is no objection.

The Court: It is so ordered.

Q. (By Mr. L. E. Lyon): Mr. Barkis, you have testified on your examination that you personally located these records in the offices of your company, where? A. In Houston, Texas.

Q. Referring to the Exhibits FH-1, FH-2, and FH-3 series, is this a complete file of all papers with respect to that particular transaction that you were able to locate?

A. Yes, it is. It refers to Wells 596 and 598.

Q. Well, FH only refers to 596.

A. That is correct.

(Testimony of Bruce Barkis.)

Q. You have testified that you were selling direct to the Gulf Company at the Goldsmith lease at that time. Was that pursuant to any prior arrangement made with the Gulf Company?

A. Yes, it was. [2912]

Q. What was that prior arrangement?

A. The Gulf Company had advised us that they would place their orders, purchase orders, direct with us, and requested that we grant them the usual supplier's discount. That was done through the purchasing department. And on that basis, the business of the Goldsmith lease was handled in that manner and the orders were placed direct by Gulf Oil to B and W, Incorporated.

Q. Now, how did it happen that you looked in the records at Houston for these particular records, Mr. Barkis?

A. Well, I was aware of Mr. Hall, Sr.'s testimony where there was the controversy over the charge of mismarking our invoices, and I went through the files to examine these records.

Q. And these particular wells were the wells referred to by Mr. Hall, Sr., in his testimony, were they not?      A. Yes. They are.

Q. And just state now, taking Exhibit FH-1, just what these records are, and FH-2 and FH-3.

A. FH-2 is a delivery ticket of B and W, Incorporated and it is evidence of delivery of equipment to the Goldsmith Well No. 596-56 on August 31, 1950.

(Testimony of Bruce Barkis.)

Q. Now, does that Exhibit FH-2 tell you how that equipment was delivered to that well?

A. Yes, it does. [2913]

Q. How was it delivered?

A. Our representative in West Texas at that time was A. J. Flowers, and this Exhibit FH-2 shows that he delivered the equipment to the well.

Q. Does that Exhibit FH-2 show any signature of anyone receiving that equipment?

A. Yes, it does. Mr. C. J. Fisher was the superintendent on the Goldsmith lease at that time, and his signature appears on this Exhibit FH-2.

Q. Now, Exhibit FH-2 shows that there was delivered then to that well, to Mr. Fisher at that time, certain equipment. How was that equipment designated to the Gulf Company by the delivery ticket?      A. It shows the description——

Mr. Scofield: The delivery ticket is the best evidence, your Honor. It is connected to the exhibit. It is in evidence.

Mr. L. E. Lyon: It is not in evidence yet.

Mr. Scofield: It has been marked, your Honor. The delivery ticket is there.

The Court: Are you testifying from your own knowledge or are you just testifying to what appears on the exhibit, Mr. Barkis?

The Witness: I am just testifying to what appears on it.

Mr. L. E. Lyon: Well, if you are just doing that—— [2914]

(Testimony of Bruce Barkis.)

The Court: Let the document speak for itself then.

Mr. L. E. Lyon: That is correct.

Q. Now, proceed with Exhibit FH-1, Mr. Barkis, and tell us what that is.

A. Following the delivery of equipment to the well, a copy of this delivery ticket would be furnished Gulf Oil Corporation, transmitted to their Fort Worth, Texas, office, which is division headquarters, and the purchasing department there issued their purchase order dated September 13, 1950, which is Exhibit FH-1, and the comment in the bottom portion of the order, purchase order, shows "Confirming Order 8-31-50," which is a confirmation and is the ordinary practice of the Gulf Oil in such matters.

Q. Do these papers show that the order was originally a telephonic order to your representative to deliver the goods immediately to the well without waiting for an order from the Gulf headquarters?

A. Yes, it does, and that was customary practice.

Q. Now, proceed with Exhibit FH-3. What is that?

A. Following the receipt of the purchase order, Exhibit FH-1, in the Houston office, it was customary practice, and still followed, to make an invoice.

Exhibit FH-3 is the exhibit number of the invoice of B and W, Incorporated, to Gulf Oil Corporation at Fort Worth, covering the equipment furnished on delivery ticket, Exhibit [2915] FH-2, and also shown on the purchase order, Exhibit FH-1.

(Testimony of Bruce Barkis.)

Mr. L. E. Lyon: At this time I will offer in evidence the documents as identified by the witness, as Exhibits FH-1, FH-2, and FH-3, Exhibit FH-1 being the purchase order No. A 98589 of the Gulf Oil Corporation to B & W, Inc., dated September 13, 1950, and stating "Confirming Order 8-31-50"; Exhibit FH-2 being the delivery ticket of B and W, Incorporated, showing the delivery on delivery ticket No. 3991 to the Gulf Oil Company, Goldsmith lease, Well No. 596-56, on August 31, 1950; and Exhibit FH-3 being the invoice of B and W, Inc., to the Gulf Oil Corporation, dated September 26, 1950, and carrying the Gulf order number A-98589.

Mr. Scofield: Object to the offers, your Honor, because they are incomplete.

The Court: That goes to the weight, does it not?

Mr. Scofield: What is it?

The Court: That goes to the weight of it, does it not?

Mr. Scofield: Yes, sir.

The Court: Objection overruled. They are received in evidence.

(The documents referred to, marked Defendants' Exhibits FH-1, FH-2, and FH-3, were received in evidence.)

Q. (By Mr. L. E. Lyon): Now, Mr. Barkis, will you similarly explain for the purpose of the record the documents, Exhibits FI-1, FI-2, and FI-3 for identification? [2916]

A. The records are similar to the previous offer.

(Testimony of Bruce Barkis.)

The first is Exhibit FI-2, which is the delivery ticket dated August 31, 1950, covering the delivery of four 7-inch B and W spiral bow, latch-on centralizers and eighteen 7-inch B and W Nu-Coil scratchers, to Well No. Goldsmith 598-56, by Mr. A. J. Flowers, a B and W employee, and receipted for by Mr. C. J. Fisher of the Gulf Oil Corporation.

In the same way as previously, the purchasing department of Gulf Oil in Fort Worth issued purchase order, Exhibit FI-1, a confirmation order for this equipment.

And on September 26, 1950, B and W invoiced Gulf Oil Corporation on Exhibit FI-3 for the equipment delivered and specified in the purchase order for Well No. Goldsmith 598-56.

Q. With respect to this equipment delivered to these wells, 596 and 598, Mr. Barkis, was there any other paper material supplied by B and W to Gulf Oil Corporation of any kind or character?

A. None that I know of. None.

Mr. L. E. Lyon: I will offer in evidence at this time the documents identified by the witness as Exhibits FI-1, FI-2, and FI-3, the documents being, respectively, the purchase order of Gulf Oil Corporation addressed to B & W, No. A-98587, dated September 13, 1950, which is Exhibit FI-1; Exhibit FI-2, is a delivery ticket of B and W, Inc., No. 3992, dated August 31, 1950; and Exhibit FI-3 is [2917] the invoice of B and W dated September 26, 1950, directed to the Gulf Oil Corporation and bearing



(Testimony of Bruce Barkis.)

the Gulf order number A-98587, showing the Goldsmith well number 598-56. [2918]

\* \* \*

JOHN HALL

(Recalled)

Direct Examination

(Resumed)

By Mr. Scofield: [2940]

\* \* \*

Mr. Scofield: We have here, your Honor, a schedule showing the purchase of Weatherford equipment over a period of about a year from 1947, and at that juncture the purchases of this equipment was stopped. And that business was never again recaptured. Then the 181 exhibit shows that the business went to B & W.

The Court: Is the purpose of this conversation to prove why Mr. McCloskey did so and so?

Mr. Scofield: No. The purpose of this conversation is to show what Mr. Hall did about the termination of this business insofar as Weatherford Oil Tool is concerned and how he attempted to recapture that business and whether he was successful or not.

The Court: I will admit the conversation, but not what Mr. McCloskey may have said, as proving the truth of what [2941] he said.

Mr. Scofield: That is all right.

(Testimony of John Hall.)

The Witness: Ask the question again. I mean, read it back.

(Question read by the reporter.)

A. Mr. McCloskey said that they had quit using Weatherford scratchers and centralizers because of threats made by B & W with respect to their patents, Kenneth Wright making those threats.

Q. Were you able to obtain that business or obtain any business from the Amerada Petroleum Company after they terminated your business in the end of 1947? A. We weren't in California.

Q. Now, did you contact anybody in the Amerada Petroleum Company after that date?

A. I did.

Q. When?

A. I contacted Mr. McCloskey again in the latter part of 1948.

Q. Where did you see him?

A. I saw him in the same office in the Subway Terminal Building.

Q. Anybody with you?

A. No. I was by myself.

Q. Was there anybody with Mr. McCloskey when you had [2942] this talk with him?

A. There may have been. No one sitting with us. There is another office right by there and the door was open, so they could have heard the conversation. Who it was I don't know.

Q. What was the conversation at that time that you had with Mr. McCloskey?

(Testimony of John Hall.)

Mr. L. E. Lyon: Objected to, your Honor, as calling for hearsay testimony.

The Court: It will be received for the purposes, insofar as the third party is concerned, as showing what he said, and not for the truth of what was spoken. Overruled.

A. In answer to my question of Mr. McCloskey as to whether or not the——

Q. (By Mr. Scofield): What did you ask Mr. McCloskey on that occasion?

A. I asked Mr. McCloskey——

Q. Do you know his initials, Mr. McCloskey's initials?

A. It is Downs McCloskey. I don't know his initials. I think they call him "Downs."

Q. What is his office with the Amerada?

A. He is, I would say, division geologist or California geologist. He is a geologist.

Q. What was the purpose of your meeting?

A. My purpose—— [2943]

Mr. L. E. Lyon: Objected to as immaterial.

A. ——of the meeting was to get business——

The Court: Overruled.

A. ——again and to attempt to find out if they still feared the B & W patents.

Q. (By Mr. Scofield): Now, give me the substance of the conversation.

A. He said there was no use——

Mr. L. E. Lyon: The same objection, your Honor.

The Court: Overruled.

(Testimony of John Hall.)

A. Mr. McCloskey said there was no use discussing patents now because Amerada had stuck a string of casing with B & W scratchers on it in the Rio Vista area before they got on bottom with the pipe. As I recall, he said the casing was below 5,000 feet and was to be run about 8,000 feet and that, as a result of the pipe sticking, Amerada would not use anybody's scratchers any more.

Mr. Scofield: That is all. [2944]

\* \* \*

### Cross-Examination

By Mr. L. E. Lyon:

Q. Mr. Hall, who was George Hall?

A. George Hall was my brother.

Q. And were these presumed sales made at Huntington Beach or at Newport Beach, to the Amerada Petroleum Company?

A. Call it what you wish. It was in the flats between Newport and Huntington Beach. Whether the city boundaries of either town go out, I do not know.

Q. How deep was this well that you say you were on at the Amerada property?

A. Oh, I would say somewhere around the neighborhood of 4,000 feet, more or less.

Q. Well, which was it, do you have any recollection? A. I stated it.

Q. What was the well name and number?

A. I do not recall the well number or name.

(Testimony of John Hall.)

Q. What types of scratchers were used?

A. We used Weatherford scratchers and Weatherford spiral centralizers.

Q. How many?

A. Let us say in the neighborhood of a hundred scratchers, judging from this chart I have in front of me here. I don't know what exhibit it is.

Q. What are you trying to do, trying to calculate back [2945] from the \$709.26 for the February, 1946, chart?

A. That is correct.

Q. Do you know whether all those scratchers were used in a single well?

A. In that well? Well, they most certainly were.

Q. I mean, all of them that were charged for in the month of February, 1947, were all used on one well?

A. I am pretty sure they were, and likewise all those centralizers. As I recall, it was a pretty good-sized job.

Q. And it is your statement now that all the centralizers and all the scratchers shown on Exhibit 181 and included in the tabulation, dollar tabulation, for the month of February, 1947, were used on a single well between Newport and Huntington Beach in what you have called the flats, by the Amerada Petroleum Company, is that right?

A. There could have been two wells there, but I rather think that it was probably one well.

Q. Well, do you have any recollection?

A. I have a recollection it was a sizable job.

(Testimony of John Hall.)

Q. Your recollection is that it was something in the neighborhood of 4,000 feet, too?

A. Yes. It could have been some less or slightly over that.

Q. Were these scratchers and centralizers mounted on a casing? [2946]

A. They certainly were.

Q. Where, and the length of casing?

A. Running from the bottom, from the bottom joint on up as high as they went, spaced equidistant—

Q. Well, how high did they go?

A. —at intervals of 10 to 15 feet apart.

Q. Well, which were they?

A. As I stated, at intervals of somewhere between 10 and 15 feet apart.

Q. That is as close as you can give it?

A. That is right.

Q. How far apart were the centralizers positioned?

A. They were staged somewhere in the neighborhood of possibly 40, 45 feet apart, more or less.

Q. What size casing was it?

A. I am quite certain it was 7-inch casing.

Q. Was there any cementing operation carried on? A. There was.

Q. Was the casing with the scratchers on it moved while the cementing was carried on?

A. It certainly was.

Q. Was it continued to be moved until the pumping of the cement into the well was stopped?

(Testimony of John Hall.)

A. The casing was moved to the very end of the cementing job, when the plugs bumped, the casing was put in place—after [2947] the plugs bumped, the casing was put in place.

Q. Were all these operations that are noted in Exhibit 181 carried on in that same field, in that same flat?

A. I wouldn't say necessarily so. They could have been carried on elsewhere.

Q. I am asking you as a fact, do you know?

A. I don't know.

Q. Well, were they?

A. I didn't say that they were, sir.

Q. Well, I am asking you, were they all carried on in the flat between Newport and Huntington Beach?

A. I still can't say that.

Q. What is that?

A. I still can't say that they were.

Q. Well, if you can't say so, say so. Don't say that they might have been or may not have been.

In April, 1947, there is a charge of \$490.88 for scratchers and centralizers. Were those all used on one well?

A. Just a moment. You couldn't tell by this whether they were all used on one well.

Q. Were you on this well?

A. I beg your pardon?

Q. Were you on these wells of Amerada at that time?

A. I told you I was on the first well.

Q. Were you on the second one? [2948]

A. There was a man by the name of Allen Moore—

(Testimony of John Hall.)

The Court: Were you on the second one?

The Witness: No, sir.

The Court: Well, answer the question. Just listen to the question and answer the question and we will get along much better.

Q. (By Mr. L. E. Lyon): Isn't it a fact that in one of these wells, with Weatherford scratchers, Weatherford centralizers, of the Amerada Petroleum Company in the year 1947, the casing was stuck off bottom on an upstroke of the reciprocation so that they could not lower the casing to bottom, in one of these particular jobs for which the charge is made in Exhibit 181?

A. I do not know of any such fact.

Mr. Scofield: At the Huntington field?

Mr. L. E. Lyon: One of these particular jobs.

Mr. R. F. Lyon: The first one.

Q. (By Mr. L. E. Lyon): Do you recall that Amerada in the year 1947 started to use rotating scratchers manufactured by Halliburton Oil Well Cementing Company?

A. I do not make any such recollection.

Q. Do you know B and W brought out, introduced the rotating scratcher to Amerada?

A. I do not recall that either.

Q. You do know when Amerada started using Baker [2949] centralizers?

A. I do not know that.

Q. Do you know when Amerada started using centralizers other than those manufactured by Weatherford or B and W?



(Testimony of John Hall.)

A. I know about what time they started—oh, you say other than those manufactured—no, I do not know.

Q. I believe you were present during the time of the examination partially of the books of B and W. Do you know what type of centralizers, of scratchers, B and W sold Amerada in October of 1947?

A. I was not present in part of the examination. I was present at the start of the examination, and Mr. Knapp asked me to leave, so I left. I did not see any invoices or charges to Amerada.

Q. That answers the question.

Do you know of your own knowledge—you were here—what the scratchers were that B and W sold to Amerada for use in the flats between Newport and Huntington Beach? A. I do not.

Q. You don't know then that they were not rotating scratchers, do you?

A. I do not know whether they were rotating or reciprocating.

Q. Did you make any effort to get Mr. McClosky to come in here to tell his own story? [2950]

A. I did.

Q. What did he say?

A. The girl said that he was out of the State.

Q. Then you did not recently contact Mr. McClosky, either now or at any of the other times that this case was on trial, is that correct?

A. With respect to what?

Q. This testimony that you are giving.

(Testimony of John Hall.)

A. I did not.

Q. Is it your testimony that Amerada Petroleum has not used in California any scratchers or centralizers since December of 1947—1948?

A. That is not my testimony.

Q. Is it your testimony that Mr. McClosky told you that because of the use of a B and W scratcher in 1948, that they had never used scratchers or centralizers again?

A. He stated that because of the sticking of the casing, they had used them——

Q. And had never used them again?

A. Everybody's. Now, wait a minute. What do you mean by "never used them again?"

Q. Just what I said.

A. I don't know what they have done since that time, since talking to Mr. McClosky.

Q. And you have made no effort to talk to Mr. McClosky [2951] or anybody in California since December—of Amerada—since the latter part of 1948, to determine whether or not they are using scratchers or centralizers?

A. I have contacted Dick Holman since then in an attempt to sell him. I was not trying to sell him on anybody else's scratchers.

Q. And at that time you did not ascertain whether or not they were using any other manufacturer's scratchers or centralizers?

A. No. I did not ascertain. I assumed that they weren't.

Q. You assumed what?

(Testimony of John Hall.)

A. I assumed that they were not.

Q. What made you have that assumption?

A. From what Mr. McClosky had said previously.

Q. You mean in 1948?           A. That is correct.

Q. When was the last time you contacted Amerada in an endeavor to sell them?

A. Oh, I think I saw Mr. Holman about last June here. [2952]

Q. There is nothing that he said at that time that indicated to you that they were not using scratchers or centralizers, was there?

A. That they were not using them?

Q. Yes.

A. He didn't say that they were or were not. The only thing he said to me was that he would consider.

Q. And that is all he said to you?

A. What I had said. That is all he said to me, referring to the California area, of course.

Q. Amerada uses scratchers and centralizers in other areas, do they not?

A. Yes, I understand that they do.

Q. Do you know when the drilling program of Amerada ended in the flat between Huntington Beach and Newport Beach?

A. I would hesitate to say on that because I don't know when it was ended.

Mr. L. E. Lyon: That is all.

(Testimony of John Hall.)

Redirect Examination

By Mr. Scofield:

Q. On how many occasions did you see Mr. McClosky after the conversations that you had the latter part of 1948, when he told you that they were not going to use scratchers and centralizers?

A. I don't think I have seen Mr. McClosky since that time. I saw—it could have been at some A.P.I. meeting, [2953] but if I saw him at one of those meetings I didn't talk to him.

Q. Have you kept track of the Amerada Company in any way as to whether or not they have used scratchers since 1948, either rotary scratchers or the collar scratchers?

A. In contacting Mr. Dick Holman. I have contacted him on a number of occasions.

Q. What do you mean by a number?

A. Well, whenever I have been in California I have usually attempted to contact Mr. Holman.

The Court: 20 times, or what?

The Witness: Oh, no. Probably since that time I have talked to Holman, definitely, once maybe twice.

The Court: You would have saved a great deal of time if you had said that in the first place.

Q. (By Mr. Scofield): And did Mr. Holman indicate to you or did he tell you that they had started using scratchers again on any of these subsequent talks? A. No, he did not.

(Testimony of John Hall.)

Q. When did you get the information concerning the well in which the pipe was stuck?

A. I got the information first from Mr. Holman.

Q. When?

A. In the latter part of 1948, on the same day, whatever day that was, that I talked with Mr. McClosky. [2954]

Q. Has anyone in the Amerada Petroleum Company ever told you that they use rotary scratchers?

A. I believe that Holman mentioned that they had used some B & W rotary scratchers. How many, I am quite sure he didn't say.

Q. Do you know whether they were rotary scratchers that stuck the pipe?

A. No, I do not.

Q. Why did they discontinue the purchase of centralizers from Weatherford?

Mr. L. E. Lyon: That is objected to as calling for a conclusion of the witness, your Honor.

The Court: Sustained.

Q. (By Mr. Seofield): Did either of these gentlemen ever tell you why they quit the purchase of Weatherford centralizers?

\* \* \*

A. Mr. McClosky said that he understood—Mr. McClosky said that they understood that Wright's patents covered all scratching or mud cake removing elements used in cementing? [2955]

\* \* \*

## KENNETH A. WRIGHT

one of the defendants herein, recalled as a witness on behalf of the defendants, having been previously duly sworn, was examined and testified further as follows:

## Direct Examination

By Mr. L. E. Lyon:

Q. Mr. Wright, will you state your experience? You have heretofore testified in this matter, I believe. A. I have.

Q. You are the vice-president of B and W, Inc., is that correct? A. I am.

Q. And you and Mr. Barkis together formulated B and W, Inc.?

A. That is correct. [2998]

Q. What is your experience and education in oil production development, Mr. Wright?

A. I am a graduate of the Department of Geology, Stanford University, class of 1921, and I am a registered professional engineer, petroleum engineering section, State of California.

I have been working in the oil industry since my graduation in June of 1921 as a geologist and petroleum engineer and drilling superintendent, and prior to that I had at times during my academic life worked in the oil fields in capacities such as what are known as a roughneck and rig helper.

Q. By what oil companies have you been employed, Mr. Wright?

A. The Tidewater Associated Oil Company. That name was the Associated Oil Company, subse-

(Testimony of Kenneth A. Wright.)

quently and now Tidewater Associated Oil Company.

The Pan-American Petroleum Company, and an affiliate known as the Petroleum Securities Company; for the Trinidad Leaseholds Company in Trinidad, British West Indies; and Young Petroleum Corporation in Southern California, and Standard Oil Company of Australia, in Australia that is, and private consulting work, and that is the total of the list I can recollect at this time.

Q. Have you made any particular study and done any work over that period of time with respect to well completions? [2999]      A. I have.

Q. For what companies?

A. The petroleum engineering work and drilling superintendent's work that has occupied my time is directly related to the so-called well-completion part of the drilling of an oil well.

Q. By whom were you employed in the year 1939?

A. I was working for the Young Petroleum Corporation part time, and part time on consulting work, aside from my duties with Young Petroleum Corporation.

Q. Had you in 1939 or prior thereto been employed in any company with or worked with Mr. Bruce Barkis?      A. I had.

Q. When did you contact Mr. Barkis in 1939, if at all?

A. I believe I contacted Mr. Barkis about February, 1939?

(Testimony of Kenneth A. Wright.)

Q. Where?

A. At his house in Long Beach, California.

Q. Was Mr. Barkis employed at that time?

A. I don't think he was. That is my present recollection.

Q. Did you and Mr. Barkis, when you were employed together, encounter any common problem with respect to well completions?

A. Yes. [3000]

Q. What was that problem?

A. The failure of cementations and the failure of wells to be as productive as might be estimated or expected.

Q. In your experience in Trinidad and Australia and in the oil fields in this country, was that a common problem existing over the fields of your experience?

A. If you will exclude Australia, I will be able to answer, because I did not drill any wells there.

Q. All right, excluding Australia.

A. May I now have the question?

(Question read as follows:

("In your experience in Trinidad and in the oil fields in this country, was that a common problem existing over the fields of your experience?")

Mr. Scofield: We will stipulate that, your Honor.

The Witness: That is a common——



(Testimony of Kenneth A. Wright.)

Mr. L. E. Lyon: I accept the stipulation.

The Witness: Am I supposed to answer, your Honor?

The Court: There is no need to answer now.

Q. (By Mr. L. E. Lyon): Now, what was that particular problem, Mr. Wright, of well completion that has been stipulated to, that was common over the oil fields?

A. As I previously stated, the failure of cementations, that is, in the cementing of the well we found that there was some part of it faulty, and in the productivity of [3001] wells based upon conclusions and observations in a given area.

Q. I believe, Mr. Wright, that you have prepared a small chart of three figures which you might use in explaining that problem. Will you take that chart and explain the problem, if it is possible from that chart, as to just what this problem was?

I will ask that this be marked for identification Exhibit FT.

Mr. Scofield: What is the number?

Mr. L. E. Lyon: FT.

(The chart referred to was marked Defendants' Exhibit FT for identification.)

Mr. L. E. Lyon: Here is a copy of it. You can mark that for the court.

Q. I place before you Exhibit FT for identification and will ask that you explain this recurrent problem in the industry, in well completions, if you can, from Exhibit FT.

(Testimony of Kenneth A. Wright.)

A. FT, is that what this is?

Q. Yes.

A. This Exhibit FT before me, and pointing to the illustration on the left-hand side which is called A-1, illustrates a typical problem as is found in the State of California wherein the general practice is to set casing over an oil sand and thereafter demonstrate to the [3002] industry—correction—I mean demonstrate to the Division of Oil and Gas that you have effectively made a seal, and are given permission to proceed drilling into the oil sand and make the completion of the well.

Q. Now, Mr. Wright, in your statement with respect of a well, will you just take this pen and mark on there what is the casing, the different parts of this diagram? I believe it was prepared by you, was it not?

A. It was prepared under my instructions.

Q. All right. Now, will you just mark on there each of the components of this Figure A-1 and what it is intended to illustrate, in each particular? Let us assume that, for the purpose of this record, nobody here saw an oil well before.

A. "A" designates casing of the well.

Q. Now, that casing is what? That is a piece of pipe, is it not?

A. Yes, sir, a piece of casing which is a tubular member.

Q. Made of steel?

A. Usually made of steel, and is that part which is set into the well to permit fluid to be taken from

(Testimony of Kenneth A. Wright.)

the well to a point where the shoe in this case is positioned.

Q. Now, what is the shoe? Just mark on there. You have used the word "shoe." Just mark what is the shoe. [3003]

A. Well, "B" is the shoe, and if you will permit me, Mr. Lyon—I did not write anything—is it your request that I write "A" as casing?

Q. Yes.

A. Now, I will follow that by "B, casing shoe."

Q. Now, in this illustration of 1 you have indicated a certain structure which you have called shale. Now, what is shale?

A. Well, Mr. Lyon, that is a very, very broad question.

Q. Let us just strike that for a minute, and answer this question: Exhibit A-1 is intended to be a cross-sectional profile of an oil well, is that correct?

A. That is correct.

Mr. Scofield: I would prefer to have the witness testify with regard to this, your Honor, and not counsel telling him what it is and just asking him, "is that right?"

Q. (By Mr. L. E. Lyon): Now, just what is that profile made up of?

A. This profile section, vertical section, is intended to illustrate what is termed here as shale, and that in this sense is a very broad word. It is intended to mean the impervious section of the well.

Q. Now, just a moment. "Impervious" is what?

(Testimony of Kenneth A. Wright.)

A. Impervious to filtration of fluids into it, or withdrawing of fluids from it, even though we have a [3004] substantial pressure reduction.

The Court: Is it impervious to penetration of gases?

The Witness: That is true, your Honor.

The Court: In other words, whatever formation there is there, it would be impervious to any flow of gas or liquid, is that it?

The Witness: That is correct, your Honor. And if I may go just a point further, that does not mean it does not have porosity, though. The shale is actually composed of parts, and there is porosity even though there is not permeability within the pressures.

The Court: Will gas get through it? That is the question.

The Witness: No, your Honor.

The Court: Not because of the solidity of the formation entirely but because of the balancing of the pressures?

The Witness: We have reduced the permeability to the point where under the pressures present there can be no flow and the water stays in place and the oil stays in place, as is intended. [3005]

Q. (By Mr. L. E. Lyon): The next portion of that profile indicates what? And I am talking about the portion A-1 of Exhibit FT for identification.

A. The next illustrates water-sand, and water is addressed to the fluid content in the interstitial

(Testimony of Kenneth A. Wright.)

tubes and cavities and the sand, of course, refers to the solids.

Q. Now, that material, is that sand which you have indicated, water-sand there, is that impervious or is that pervious?

A. The water-sand is pervious.

Q. Meaning?

A. Meaning that fluid will flow into it or out of it. If you create a pressure balance in either of the two directions required or desired.

Q. And by "fluid" you mean either liquid or gas?

A. That is correct.

Q. All right. Now, proceed to the next section of the profile.

A. The next section below is termed "shale" again and is indicated to be an impervious section the same as that positioned above the water-sand and, to all practical purposes of the well, could be identical or have differences so minute it would make no difference.

Q. With respect to illustration A-1 of Exhibit FT you were explaining from that exhibit the requirements for [3006] testing what—water shut-off?

A. This illustration here, A-1 and A-2, illustrates the procedures required in any oil field of the world, California being a typical one, to demonstrate that in the setting of the casing you have a seal at the point B in this particular instance, so as when you complete the well by penetrating the oil sand below that, no water from the water-sand indicated above the lowermost shale will have access to the well or

(Testimony of Kenneth A. Wright.)

be produced with the oil from the oil sand indicated here on the bottom of this illustration.

Q. How in accordance with these requirements was it intended or thought that a water shut-off or fluid shut-off would be obtained, Mr. Wright?

A. The most common method is to mix cement with water into what is termed a slurry, a slurry being a fluid. It is pumped into the casing from the top, after having been mixed, to correct water cement ratio, and pumped down the well, down the casing, that is, and upwardly in the annulus between the casing and the wall of the well.

Q. In accordance with the illustration, Exhibit A-1, where is the cement? Is it indicated there?

A. C is indicated—C indicates the cement and it also indicates what is the area above the turbulent flow section of what takes place during the period of the cementation. [3007]

Q. All right. Now, what is D?

A. D is the area above the turbulent flow section in which channeling takes place; and I mean by that the cement slurry rising upwardly does not displace all of the mud fluid ahead of it or upwardly and ahead of it, and the area in which no filter cake would be removed by the ascending cement slurry.

Q. Using A-1 and A-2—and I believe you have a full description of those figures—they are both the same in that respect, will you tell me how these figures, if at all, are indicative of the problem which has been stipulated to have existed in oil wells with respect to well completions, Mr. Wright?

(Testimony of Kenneth A. Wright.)

A. Would you repeat that question, please?

Q. The question is: How do these two figures illustrate, or do they illustrate the problem of well completions which you had encountered in your experience?      A. Well, taking—

Q. And you have to take the A-3 along with it. If you do, take illustration A-3 also, Mr. Wright.

Mr. Scofield: There is no A-3 on it.

Mr. L. E. Lyon: A-3.

The Witness: It is called "B."

Mr. L. E. Lyon: Oh, pardon me, pardon me.

A. Referring to illustration A-2 you will find below [3008] the casing shoe a short section of hole which terminates in the shale. That is the condition of the well at the time the test was made, and the demonstration of the effectiveness of a seal is actually from the drilled hole below, stopping short of the oil sand, as related to the water in the sand positioned above. There is no demonstration of the effectiveness of the seal in the vertical section throughout the oil sand. It is only is there a seal or ring of cement existing as a collar around the casing in the annular section somewhere above the shoe or above the extended hole below.

Now, I might add at this time, and I think it is advisable, that an operator having a well in the condition of A-2 would then drill more hole through the casing to the ultimate depth and complete it in some manner that best suited his ideas of how to complete it.

(Testimony of Kenneth A. Wright.)

Q. That is, he would drill right through that shoe B which you have indicated, Mr. Wright?

A. That is correct. The ball and check arrangement indicated in A-1 is a drillable arrangement, the ball being usually of a specific gravity which will float on the mud fluid or water and the check or seal in the shoe is obtained in that manner. The internal section is made of plastic or cement so it is drillable.

Mr. Scofield: Hasn't the shoe B been drilled in A-2?

The Witness: Yes, that is right. [3009]

Mr. L. E. Lyon: That is what he was just testifying to.

Mr. Scofield: I didn't understand that.

Mr. L. E. Lyon: Go ahead.

A. Now, if I understand your question——

Q. Just before we go to illustrate B on here, were the operations of A-1 and A-2 which were required to determine that you had a water shut-off before you were permitted to drill into the oil sands in illustrations like Exhibits A-1 and A-2, is that correct?

A. That is correct. That is what I testified.

Q. All right. Now, proceed with illustration B of Exhibit FT.

A. Following the practice exemplified by Exhibits or Illustrations A-1 and A-2 of this exhibit—and it is FT—we find a condition illustrated by the illustration B where a gas sand is positioned above the oil sand and above the lowermost shale, and the operator could under that condition elect to cement



(Testimony of Kenneth A. Wright.)

the casing and set the casing, let us say, at position in the shale between the water sand and gas sand, and then carry out the operation as indicated or illustrated in A-2.

But in the event that he did not want to in the subsequent completion commingle the gas from the indicated sand from the oil sand below, he would request permission to [3010] locate the casing shoe as indicated in B, and thereafter in that manner place behind the casing a gas sand and, of course, the water sand and then proceed after making a demonstration of the effectiveness of cementation, proceed with the drilling below the shoe, as indicated in B-2, for completion.

Q. A-2?

A. A-2, correction. In that condition the Division of Oil & Gas would give their permission, with the requirement that a demonstration be made of the effectiveness of the cementation in the vertical section so as to isolate into their respective strata the water sand and the gas sand, and that requires a different procedure for making the determination or, let us call it, carrying out the test.

It is during the illustration such as B that is found out the cementation in the vertical section above the shoe, casing shoe that is, is found to be faulty and the well would not produce gas exclusive of water, and so squeeze operations—and, I mean by that, squeeze cementing—was the remedy which the industry accepted as the method for fulfilling the iso-

(Testimony of Kenneth A. Wright.)

lation requirement required or determined by the Division of Oil & Gas.

Mr. Scofield: Pardon me, Mr. Lyon. Is the showing in B supposed to indicate a faulty cementation?

The Witness: It is not. No, it is not. I don't understand [3011] your question, so you will have to clarify it.

Mr. Scofield: Pardon me, Mr. Lyon. But I understood from your last answer, Mr. Wright, that the cementation shown in B, which is around the shoe at the bottom of the casing, was faulty cementation. Am I right in that?

Mr. L. E. Lyon: I think that if you had listened, you would not have gotten such an idea. And I think that you should refrain until cross-examination, without interrupting the witness at this time.

Mr. Scofield: Very well.

Mr. L. E. Lyon: And I would so request.

The Court: Proceed.

The Witness: May I have the question?

Q. (By Mr. L. E. Lyon): You used the term "squeeze cementing" which has been used here several times. Will you tell me what that is?

A. Squeeze cementing—

Q. And show how it would be applicable, if at all, to this illustration B of Exhibit FT for identification under the problems that you have just stated.

The Witness: May I answer them one at a time, Mr. Lyon?

Mr. L. E. Lyon: Yes.

(Testimony of Kenneth A. Wright.)

A. Squeeze cementing, first of all, contemplates cementing where you do not have circulation. I mean by that if you are able to circulate fluid down the casing or by [3012] setting a tool within the casing such as a packer or squeeze tool, and if you could obtain circulation, why, that, technically, would not be squeeze cementing; and it is not uncommon to have wells where, on attempting to do squeeze cementing, you actually do get circulation returns, as we call it. And so, on a strict sense, that would not be a squeeze job. That would be a recementing operation as distinguished from squeeze.

Squeeze cementing is where you pump cement into the well and the point of discharge or ultimate point where the cement will become positioned or located is unknown to you. You simply have a seal system on the discharge side and you have an intake point on that side, so by arrangement of packers and tubing, you simply just force liquid, cement slurry, either down or out around the shoe, like could be done in A-2, or out through perforations which would be put in it or had been put in it—correction—into the casing in the illustration B. And I will carry on this to the extent, as for example, if an operator had desired to produce gas from the sand indicated there, and upon perforating opposite that gas sand he got in his flow as the liquid coming from the well, was water and gas, and his previous determinations had been that he should produce gas free from water, he would resort to squeeze cementing.

(Testimony of Kenneth A. Wright.)

Q. Now, let me just get this straight. You say that [3013] he would perforate. What would he perforate?

A. Perforate means to place or make hole in the casing which has been set in the well.

Q. You have stated an example here if he wanted to produce the gas from the gas sand and he found out he was getting both water and gas, is that right?

A. That is correct.

Q. Now, he would perforate, then. Where would he perforate?

A. In this illustration he would perforate all or a part of that vertical section which is indicated as gas sand.

Q. He would perforate the casing A there and through whatever cement there was there. Is that cement?

A. The perforating tool is lowered down inside the casing to the desired point, and if we are describing a gun perforator, then it is lowered in usually on a conduit and line, although they are run on tubing as well, position the gun, perforating gun opposite the gas sand, and by closing the circulating actually makes holes through the casing, through any cement that might be existing, through the outside of the casing and the wall of the well and so on into the sand itself.

Q. Then he would do what?

A. Following that he would put the well on production.

(Testimony of Kenneth A. Wright.)

Q. Well, now, and then if he found gas and water? [3014]

A. He must put the well on production to determine what comes out of the well.

Q. All right.

A. Then, from then he would determine what flowed from the well and if it was gas free of water, or water without gas, he makes the determination.

Q. Yes, all right.

A. And then, as I say, he correlates that back to his information previously gained or attempted by him that, in his determination, that was gas sand and he should be able to produce water free of gas.

Q. Then what would he do?

A. As I said, if he in his mind had concluded that there was dry gas available in that sand, and he got water with it, then he knows that he has had a failure of cementation for some reason and must resort to remedial operations.

Q. And when he used squeeze cementing for that remedial operation, just explain what would happen.

A. Assuming the perforations placed in the casing opposite the gas sand, he would then position a squeeze tool in the area on the casing directly above it and carry out what we call squeeze operation. And there are catalogues here in evidence of Baker and Halliburton where the squeeze tools common to the industry are illustrated. Do you wish to put them in evidence? [3015]

Q. Now, is that squeeze operation in effect fore-

(Testimony of Kenneth A. Wright.)

ing the hydraulics from the fluid through the perforation——

Mr. Scofield: I object. Let the witness testify as to this.

The Court: Objection overruled. Don't interrupt.

Q. (By Mr. L. E. Lyon): ——through the perforation under pressure, that cement as it goes through the perforations that we previously got in the cement casing and sealing off the gas, and let that fluid under pressure go where it might find a fluid passage?

A. This is a hydraulic system and it reacts entirely to fluid flow, and the point of escape is the direction in which it will flow.

Q. What are you seeking to do by that squeeze cementing, then?

A. The squeeze operation is just pumping the cement slurry into this annular space without knowledge of its limit of travel or the area under which it will become effective. There is no guarantee whatsoever that it by one squeeze probably will be effective or perhaps fifteen.

The Court: And your objective, I take it, is to cement off the water from the sand above the gas sand, as shown in the exhibit on Figure "B"?

The Witness: What we would like to get, your Honor, is to have a seal, and what I mean by that is have a complete [3016] annular column of cement throughout the vertical section of the gas sand, and that will do the job and that is all that is required.

(Testimony of Kenneth A. Wright.)

The Court: You mean you would perforate your well then and put your well on gas production?

The Witness: On gas production, that is right.

Q. (By Mr. L. E. Lyon): Now, when you wanted to get this separation of recovery from different portions of the well and there was a cementing failure prior to or in this period of 1939, was there any other method known of making a separation of the strata setup to avoid intermingling of the gas, oil, and water from different strata, Mr. Wright, where you had a cement failure, was there any other way, other than by squeezing cement, was there any other way known? A. Not that I know of.

Q. When you found this multiple-sand condition, the only way prior to 1939, of being sure of getting a separate production was to resort to squeeze cementing, is that correct? A. That is correct.

Q. All right. Now, you have testified that you met Mr. Barkis sometime in February, 1939. Did you discuss this problem of separate production from different strata of sand with Mr. Barkis at that time? A. I did. [3017]

Q. And what did you discuss?

A. Pardon me. I believe I saw Mr. Barkis about March. For one month's difference there, I just don't recall. Now, may I have your question again?

Q. It was March, then, instead of February?

A. It was March.

Q. That is the correction you wanted to make?

A. That is correct.



(Testimony of Kenneth A. Wright.)

Q. Now, what did you discuss with Mr. Barkis at that time?

A. I asked Mr. Barkis what was his opinion of placing abrading devices on the casing throughout the section where permeable strata in the well existed, for the purpose of removing the filter cake during the period of the setting of the casing.

Q. And what was Mr. Barkis' reaction to that suggestion, if any?

A. Mr. Barkis thought it was an excellent idea and had merit.

Q. And did you do anything after that discussion?

A. As a result of that discussion, Mr. Barkis and I formed B and W to exploit that basic idea.

Q. And B and W was formed when?

A. In the latter part of June, 1939.

Q. And following the formation of the corporation what, [3018] if anything, did you do to carry forward that problem—I mean that project?

A. The first thing that was done, I contacted a patent attorney here in the City of Los Angeles, by the name of James Abbott, and made preparation for an application for a patent and started in thereafter to design tools or devices which would carry out this idea which I disclosed to Mr. Barkis.

Q. Now, you have testified that you made preparations to file an application for patent. I place before you a copy of Plaintiff's Exhibit No. 31 and ask you what relation, if any, that patent has to



(Testimony of Kenneth A. Wright.)

your testimony just given, and Exhibit No. 31 is the Wright patent No. 2,338,372.

A. Is there a question before me?

(Pending question read.)

A. That is the patent which I made application before by consulting with Mr. James M. Abbott, the patent attorney, and subsequently issued January 4, 1944.

Mr. Scofield: Is that the '372 patent?

Mr. L. E. Lyon: Yes.

Mr. Scofield: I don't believe that is the exhibit number.

Mr. L. E. Lyon: Exhibit 31.

Mr. Scofield: I believe it is No. 37.

The Witness: No. 37. [3019]

Mr. L. E. Lyon: Pardon me. That is 37. My error. All right.

Q. Now, this patent, Exhibit 37, you state is directed to, as you understand it, a method?

A. That is correct. [3020]

Q. Now, what is that method, Mr. Wright?

Mr. Scofield: The patent itself is the best evidence, your Honor.

The Court: Do you mean that you wish to have him describe it in detail or just generally?

Mr. L. E. Lyon: Describe it generally and in detail, your Honor, giving this Court the benefit of the inventor's explanation of the method patent which is in suit. If your Honor deems the matter self-explanatory, there is no need of it.

(Testimony of Kenneth A. Wright.)

The Court: Unless the language in the Letters Patent is ambiguous, that would be the best evidence, wouldn't it?

Mr. L. E. Lyon: It is not seeking to alter, modify or change it in any way. It is merely to give the Court the explanation of the patent in suit.

The Court: He might state generally what the method is, give us a short answer or a thumbnail description of it.

Q. (By Mr. L. E. Lyon): Will you do as the Court has requested, Mr. Wright?

A. This patent is addressed to the basic premise that there is filter cake on the permeable sections of the well that is drilled.

The Court: The filter cake forms and adheres to the formation, is that it? [3021]

The Witness: The filter cake—may I answer it in this way—is a product of actual deposition of the solids in the drilling mud on the face of the permeable section, and it is identical and it is——

The Court: By “permeable section,” you refer to the formation?

The Witness: I speak of the permeable section as being that part of the well which would—which can possibly contain the material for which you are seeking to drill the well. Now, I do not mean that you drill the well between water, although it is possible to drill wells for water, and could be carried out in the same manner.

I am addressing the remark——

(Testimony of Kenneth A. Wright.)

The Court: It is what you call a formation, is it not?

The Witness: Well, your Honor, if I may put it this way, the shales are impermeable as far as deposition of filter cake thereon. That does not mean if you had sufficient pressure and isolated it into a test section you might not have some minute filtration into it, but as far as this well that we are drilling here is concerned, while it still has porosity, the permeability is so low that there is no filtration or separation of the fluids from the products of the well drilling.

The Court: That cake will not adhere to it, then?

The Witness: If you put it that close together, into [3022] pretty fine physical chemical problems, because there might be one molecular cake.

The Court: But generally speaking?

The Witness: Generally speaking, there is no filter cake on the shales because they are so impermeable, no fluid moves into them. It simulates in effect the laboratory work of a chemist, like putting filter cake in a glass funnel and separating the filtrates. In that case we don't have porosity. We have a colloidal material in suspension in the drilling fluid, assuming a water base mud. I do not mean to carry this thing on indefinitely because we have oil base mud, too. With a filtration we have a separation of filter cake and filtrate.

Q. (By Mr. L. E. Lyon): What his Honor is after there, Mr. Wright, is that the filtrate or the filter cake forms from the drilling mud on the face

(Testimony of Kenneth A. Wright.)

of that portion of the well which, for example, you have shown in Exhibit F'T as being the water sand, the gas sand and the oil sand.

A. That is right.

Q. As differentiated from that structure which you have said is impermeable and has defined as shale?

A. That is correct.

Q. Is that what his Honor was after?

A. That is correct. Now, with that explanation, and having knowledge that the ascending cement slurry would do [3023] two things, it would not completely displace all the mud ahead of it, that is, that arose in the annulus and that the filter cake would not be scoured off by the ascending cement slurry, that is, it would still remain there so that when you completed the cementing operation of pumping this cement slurry down the casing and upward in the annulus, even though as illustrated as in A-1 and A-2 there is demonstrated an effective seal under those conditions.

Upon examination here by perforating the gas sand in B we did not find cementation. That is, it was faulty. Now, coupled with that is the fact that the colloidal material in the drilling fluid, assuming it is drilling fluid of the water base type, can make limited and very limited penetration into the sand itself. That is, some particles are small enough under those conditions to make, you might say, a minute penetration into the interstitial tubes of the cavities. How far that goes is a matter of considerable debate and it will depend upon the permea-

(Testimony of Kenneth A. Wright.)

bility of the particular sand, the partical size of the sand. If it was a large gravel, for instance, it might go over many feet. That is not to say that we find oil residue like that, but, that illustrates it.

So that there is slight penetration and deposition of the colloidal material in the face of the permeable strata, and what I mean by that, the gas sands and the oil sands [3024] which are the objective part of the drilling of the well. So to that extent we have a similar face upon which to place the cement seal and I do not mean identical, but partially so, so that if you take the gas sand there, or the oil sand, and permit a filter cake to deposit upon it, you have this minute penetration.

Do I make my point clear?

Mr. Scofield: Just a moment. Your Honor, I move that that answer be stricken first as nonresponsive to the question to give a thumbnail description or explanation of the patent, and second, that it is entirely in conflict with the disclosure of the patent itself. There is no disclosure in this method patent of anything that he has said about these permeabilities and the deposit of mud cake on the permeable sands and impermeable sands, such as he has described in this answer. I move it be stricken.

The Court: Motion denied.

Q. (By Mr. L. E. Lyon): Proceed, Mr. Wright. I believe we had interrupted your explanation with a statement of where the mud was deposited and

(Testimony of Kenneth A. Wright.)

what you meant by filter cake. Will you proceed with your explanation of the patent, Exhibit 37?

A. Well, I will just read this——

Mr. Scofield: I want his answer restricted, if your Honor please, to a thumbnail description, as you have [3025] indicated. Now, the patent itself we have here. We have not only the patent in evidence, we have the complete file history in evidence. So that I think that any description or any statement as to what this patent stands for is entirely out of place.

The Court: It is probably incompetent.

Mr. Scofield: That is right.

The Court: I just wanted for my general information what he says. We will treat it as the argument made by Mr. Lyon through the mouth of Mr. Wright.

The Witness: Well, if I may, with your permission, read the start of the second paragraph——

The Court: I did not want that. I just thought you could tell me, very briefly, what the method is. That may be an unfair question, to you.

Mr. L. E. Lyon: No. That is all right. I think he can answer that question, your Honor.

The Court: I think I understand what the problem is, now.

Mr. L. E. Lyon: All right.

The Court: So, how does this method solve it? What is your method of solving it, the general method?

(Testimony of Kenneth A. Wright.)

The Witness: The answer to it according to my patent is to put abrading devices on the casing and abrade the wall of the well. In this patent I state here in the third line [3026] of the second paragraph, "In the producing area"—

The Court: In other words, you would not want to waste any time abrading the shale unless you abraded the sand you wish to produce from?

The Witness: The producing section for the permeable strata.

The Court: Would you also abrade the sand which you wish to cement off?

The Witness: That is the section.

The Court: In other words, you might abrade the water sand, the gas sand and the oil sand, is that correct?

The Witness: Those are all potential producing sections of the well.

The Court: And your method would apply equally to each of those sands, is that true?

The Witness: That is correct.

Q. (By Mr. L. E. Lyon: While you are abrading, what do you do?

A. The abrading can be carried out by placing these abrading devices on a casing and either by rotating the casing or reciprocating it, and during that period abrade and change over to the fluid, the succeeding fluid.

Q. What do you mean by the succeeding fluid?

A. Well, usually in setting the casing there are

(Testimony of Kenneth A. Wright.)

the changes from the drilling fluid to the cement slurry [3027] fluid.

The Court: It is an attempt by abrading to accomplish what the welder accomplishes, by mudlogging when making a well, is that it?

The Witness: Not quite. During abrasion we remove the filter cake which has been accumulated there by the process of filtration and carry on the abrading to get into this first thin skin, shall I say into the face of the sand itself, the permeable or the producing section. [3028]

The Court: You hope to achieve a well between the sand and the cement, is that it?

The Witness: To permit the cement slurry to have direct contact with the producing section of the sand.

The Court: And to be mixed in with it to some extent, isn't that true?

The Witness: Not mixed in with it, your Honor. We achieve a clean line or have a face of cement firmly contacted against the sand itself.

The Court: You abrade the surface of the sand so as to give a clean bond?

The Witness: A clean bond.

The Court: A clean bond.

The Witness: A clean bond, that is it.

The Court: A clean bond, and also I take it to provide some surface for the cement to adhere to?

The Witness: That is correct. That is all in the one operation.



(Testimony of Kenneth A. Wright.)

Q. (By Mr. L. E. Lyon): Now, won't cement bond to mud, to rotary mud or to the filtrate?

A. That is a very, very—I would say yes, it does, to a degree sufficient to make seal for pressure differentials which occur in many, many wells.

The Court: Would it be fair to say that the difference between the wall before the use of your process and afterward [3029] would be the difference between a smooth surface and a rough surface when it comes to causing something to adhere?

The Witness: That is roughly so, your Honor, but not quite.

The Court: I did not mean that it would have to be scientifically so, but is that generally what you are attempting to achieve?

The Witness: We are attempting to have a complete annular fill in this, the area through which the bit is passed, and it is an irregular profile in the vertical section and it is an irregular section in the plan section, to a certain extent. We cannot, as you well realize, get down in these holes to make all the observations we would like to make.

The Court: But in the common language of a layman, you want to scratch off that mud cake and provide a rough surface?

The Witness: A clean bond.

The Court: For the cement to make a clean bond?

The Witness: That is correct, a clean bond, which I think is the best— [3030]

(Testimony of Kenneth A. Wright.)

The Court: Is this a good point at which to interrupt the examination?

Mr. L. E. Lyon: Just one question.

Q. Does an abrading of the productive sands have anything to do with the flow characteristics of that sand?

A. It is possible, as I have previously stated, to have this material actually flow to a limited depth into the interstices, cavities or tubes and be positioned there and be returned for flow coming from the sand into the well so as to give us a plugging action.

The Court: That is the mud cake?

The Witness: That is, the material becomes lodged in the interstices or tubes and cavities.

The Court: After the cementation process has been completed then it is necessary to perforate to bring in the well?

The Witness: Then we perforate the casing, your Honor. It passes through the casing, through the cement, any mud that might be left as filter cake at that time, and on right into the sand itself, and that is the gun-perforated hole.

And let me say this before it gets too far afield: that we have had mechanical perforators which would do this work for many, many years, but their adaptability to this problem is very, very limited. So the gun perforator pushed the mechanical perforator into oblivion. [3031]

\* \* \*

EUGENE L. DAVIS

called as a witness by defendants, being first sworn,  
was examined and testified as follows:

The Clerk: Will you state your name, please?

The Witness: Eugene L. Davis.

Direct Examination

By Mr. L. E. Lyon:

Q. What is your occupation, Mr. Davis?

A. I am a professional engineer.

Q. Engaged in any particular line of engineering work?

A. Rather general; petroleum engineering and geology.

Q. What has been your training as an engineer?

A. Well, I am a graduate in geology from Stanford. I was with several oil companies as a petroleum engineer and geologist. I was with the Texas Company for 15 years; Smiley Oil for two years; and Santa Fe Railroad Company for [3035] two years.

Q. In 1939 and 1940 with what company were you? A. I was with the Texas Company.

Q. In what capacity?

A. District engineer.

Q. Where? A. Southern California.

Q. What were your duties with the Texas Company at that time?

A. I was responsible for their planning and programming of drilling and production operations in proved fields.

(Testimony of Eugene L. Davis.)

Q. Was there any particular problem in the drilling and production of oil wells which you recall in the years 1939 and 1940?

A. Well, at that time we were very much concerned and the industry itself was very much concerned particularly with the cementing problems in oil wells.

Q. Do you recall anything that was done during those years with respect to that problem?

A. Well, the most important development during that period was the researches of Jones and Berdine of the Union Oil Company.

Q. Were you acquainted with Mr. Jones?

A. Yes.

Q. And Mr. Berdine? [3036]

A. I have met him. I know Mr. Jones very well.

Q. Jones and Berdine were operating with the Union Oil Company, were they? A. Yes.

Q. Did the A.P.I. have a standing committee at that time on oil completion problems?

A. Yes, there was a committee of drilling and production practice, a subcommittee of the Pacific Coast section.

Q. And that committee met regularly, did it?

A. Yes.

Q. Where?

A. At the Los Angeles Athletic Club.

Q. About how many people attended those meetings?

A. Anywhere from a couple of dozen to 150.

Q. Did this work of Jones and Berdine for the

(Testimony of Eugene L. Davis.)

Union Oil Company come to the attention of that committee?      A. Yes, it did.

Q. Do you recall when?

A. Well, it was in the winter of 1939-40.

Q. A report was subsequently given to the A.P.I. at the Biltmore Hotel on March 19, 1940. That report is in evidence as Exhibit X—I mean a copy of it as Exhibit X. Was it before or after the A.P.I. meeting on March 19, 1940, that the matter came to the attention of the committee which you named of drilling and—— [3037]

A. And production practice. It was before that meeting.

Q. Before that meeting?      A. Yes.

Q. Was a report made by Jones and Berdine to that meeting?

A. Yes, Mr. Jones made an informal report to that committee.

Q. Did you have any discussions with Mr. Jones besides the report that he gave?

A. Yes, I talked to him several times personally.

Q. Did Mr. Jones inform you as to what the Union Oil Company was going to do at that time?

A. Yes.

Q. What did he tell you?

A. Well, that they were convinced of the validity of their findings in these researches and would adopt those practices which he indicated of cleaning the formation.

Q. As a result of Mr. Jones' presentation of this matter to this committee and your talks with

(Testimony of Eugene L. Davis.)

him did you make any recommendations to the Texas Company?      A. Yes, I did.

Q. What were your recommendations?

A. I recommended that we adopt his practice in the cementing of oil wells.

Q. Was that recommendation followed? [3038]

A. Yes, it was.

Q. Did the Texas Company make purchases of scratchers?      A. Yes.

Q. Before the A.P.I. meeting?      A. Yes.

Q. From whom?      A. B & W.

Q. Did they place those scratchers in operation?

A. Yes.

Q. In accordance with what procedure?

A. In the cementing of the water string.

Q. Did that procedure or did not that procedure follow that recommended by Mr. Jones?

A. Yes, it did.

Q. I believe that you were present at the March 19, 1940, meeting of the A.P.I. at the Biltmore Hotel, were you not?      A. Yes.

Q. And you entered into a discussion after Jones read his paper, did you not?      A. Yes.

Mr. Scofield: Is that Exhibit X?

Mr. L. E. Lyon: That is not X. This would be X, probably, -1 would be a good way to put it.

The Clerk: I think we have an X-1. [3039]

Mr. L. E. Lyon: Have you? Well, then, let us have an X-2.

(Testimony of Eugene L. Davis.)

Mr. Scofield: Won't you state, Mr. Lyon, how that differs from X?

Mr. L. E. Lyon: Yes, I will. I will state on the record just as soon as I get it marked.

Mr. Scofield: Yes.

Mr. L. E. Lyon: I would like to have pages 62 and 63 of the 1940 publication of the Drilling and Production Practice of the American Petroleum Institute, 1940 volume, marked as Exhibit X-2. I will take them off from this photostat here which is merely a reprint of the Jones and Berdine article. We have got it in enough. I don't see any reason for doing it again.

The Court: It will be so marked.

(The document referred to was marked Defendants' Exhibit X-2 for identification.)

Q. (By Mr. L. E. Lyon): Now, these pages are the discussions, the publications of the discussions, had following the presentation of the Jones and Berdine report at the A.P.I. meeting on March 19, 1940.

Can that be stipulated?

Mr. Scofield: Yes, sir.

Q. In the discussions given on X-2, at the bottom of page 62 and top of page 63, is a notation "E. L. Davis, the Texas Company, Long Beach, California." Does that [3040] refer to you?

A. Yes, it does.

Q. That gives the summary of the discussion that you had at that time following the reading of

(Testimony of Eugene L. Davis.)

or the giving by Jones of his report at that meeting?  
A. Yes. [3041]

Mr. L. E. Lyon: I will offer in evidence as the Defendants' Exhibit X-2 the pages heretofore marked for identification as Exhibit X-2.

Mr. Scofield: No objection.

The Court: Received in evidence.

(The pages referred to, marked Defendants' Exhibit X-2, were received in evidence.)

Q. (By Mr. L. E. Lyon): Mr. Jones discussed with you the procedure which was followed at Dominguez Hill in making the tests reported in his report given to the A.P.I. meeting, is that correct?

A. Yes, he did.

Q. That procedure involved the deposition of the filter cake from the drilling mud on a canvas bag, did it not?  
A. That is correct.

Q. Was that in accordance with recognized drilling-mud-testing procedure?

A. That is similar to it, yes.

Q. The tests that were made by Jones and reported at the A.P.I. meeting, were they received by the industry and accepted as a satisfactory test, to your knowledge?

Mr. Scofield: That is objected to as calling for a conclusion, your Honor. That is, this witness can testify as far as he is concerned, but speaking for the industry I [3042] don't think he is qualified.

The Court: Sustained.



(Testimony of Eugene L. Davis.)

Q. (By Mr. L. E. Lyon): Were the tests reported by Mr. Jones accepted by the Texas Company as a satisfactory demonstration of the use of scratchers in cementing procedure?

A. Yes, they were.

Q. And did the Texas Company adopt and utilize the procedure as outlined by Mr. Jones, in the actual cementing of oil wells? A. Yes.

Q. Has it continued to use that procedure in practice until today, to your knowledge?

A. Well, I haven't been with them for some years, but they did as long as I was with them.

Q. How long have you been away from them?

A. I left them in 1941.

Q. In 1941? A. Yes.

Q. Are you familiar with oil-field practices?

A. Yes.

Q. Are you doing now consulting work?

A. Yes.

Q. In your consulting work, are you generally familiar with the practices used in cementing?

A. I am. However, I should say that I just started, [3043] so far as Southern California is concerned.

Q. All right. You were located where?

A. In Canada the last year and a half.

Mr. Scofield: I didn't get that.

The Witness: In Canada the last year and a half.

(Testimony of Eugene L. Davis.)

Q. (By Mr. L. E. Lyon): In Canada in the last year and a half, to your knowledge, is the practice outlined by Jones and Berdine in their report being followed? A. It was.

Mr. Scofield: I object to that as calling for conclusion, your Honor.

The Court: Sustained.

Q. (By Mr. L. E. Lyon): Are you familiar with the practices followed in Canada, in cementing? A. Of some companies, yes.

Q. What companies?

A. Well, I was with the National Petroleum of Canada.

Q. Was National Petroleum in Canada following the procedures outlined by Jones and Berdine in the report given to the A.P.I. meeting? A. Yes.

Q. That is, they were using scratchers in the removing of the filter cake from the permeable strata during cementing operations?

A. That is correct. [3044]

Q. Now, Mr. Jones gave this report to the A.P.I. meeting. Did he read his report?

A. No. He talked from the slides primarily.

Q. And at that report did he state and did you understand how the scratchers were mounted on the casing? A. Yes.

Q. How?

A. They are mounted so that they are free to rotate and move vertically within limit, within a narrow limit.

Q. And from the report given by Jones at the

(Testimony of Eugene L. Davis.)

A.P.I. meeting on March 19, 1940, you understood that fact?      A. Yes.

Q. At the particular time of the A.P.I. meeting in March, 1940, did you have any other acute problem in the drilling of oil wells in the Long Beach area?      A. Yes.

Q. What was that problem?

A. That was concerned with the completion of producing wells in the Brown zone at Long Beach.

Q. What caused the particular problem, Mr. Davis?

A. Well, the field was old and the pressures were very low, so that there was a large amount of filtrate that went back into the productive formation during the drilling operation and deposited a very heavy filter cake on the wall. It was difficult to get it off. [3045]

Q. On what wall?

A. On the wall of the drill hole of the productive formation, of the producing sand.

Q. Was that in the impermeable or permeable portion of the hole?

A. It would be in the permeable zone.

Q. And did you do anything with respect to that problem after this A.P.I. meeting?

A. Yes. We applied scratchers to the liners that we ran in the hole and worked them in a similar way to the way the casing was worked in a cementing operation.

Q. Did you have a successful elimination of the problem by this method?      A. Yes, we did.

(Testimony of Eugene L. Davis.)

Q. Did that practice continue after that time?

A. It did as long as I was there.

Mr. L. E. Lyon: That is all. Well, wait.

Q. After you left the Texas Company in 1941, what occupation were you engaged in, Mr. Davis?

A. I was appointed to the Petroleum Administration for War at that time.

Q. And how long did you continue in that position?

A. I was with it for four years.

Mr. L. E. Lyon: That is all. [3046]

\* \* \*

#### KENNETH A. WRIGHT

a defendant herein, having been previously sworn, resumed the stand and testified further as [3057] follows:

#### Direct Examination

(Resumed)

By Mr. L. E. Lyon:

Q. I think, Mr. Wright, when we adjourned last evening you were giving a statement of a method of well conditioning as you perceived the same. I don't believe that you had finished your explanation of that method as you have set forth in your patent, Plaintiff's Exhibit No. 37. And in that regard you were speaking about abrading the wall of the well, the permeable section. What was the element which performed this abrading operation? [3058]

\* \* \*

(Testimony of Kenneth A. Wright.)

A. The abrading element that I had in mind at the time of making the application, and which has been utilized thereafter, is the wire end or the end of a wire to do a scratching operation on the face of the permeable formation.

Q. (By Mr. L. E. Lyon): Is this abrading carried out at a particular time in this operation of well completion or for a continued period of time, Mr. Wright?

A. It is carried out, if utilized to the best advantage, for a continuous period up until the time the completion of the abrading, the requirement for the abrading is completed.

Q. What is that continuous period of [3059] time?

\* \* \*

A. I think by way of explanation it should be realized that a well bore full of rotary mud, that is, drilling fluid which we call rotary drilling mud, is in effect the primary cause of the hydraulic system in motion; that is to say, opposite every permeable strata or section of the well there is filtration going on, filtrate proceeding or migrating into the permeable section and leaving behind on the face of the permeable section the filter cake, plus this uncertain amount going to some depth into the permeable section.

Now, that operation will not cease until the hydrostatic head is removed; that is to say, at any given sand the fluid level has got to be lower than that, or else it will continue.

When you go in the well with the casing equipped

(Testimony of Kenneth A. Wright.)

with the scratchers and establish circulation, or break circulation, using whichever term you elect, the filter cake is removed by the scratchers operating on the face of the permeable [3060] section either as a result of the reciprocation or rotation of the casing.

The first accomplishment is to remove, probably better named, the primary filter cake, but while you are removing the primary filter cake you cannot arrest or stop this hydraulic system and there is a second deposition taking place. You actually remove the greater amount, but there is a continued redeposition during the period of the scratching and abrading. The thickness of the cake is related to time, pressure and temperature. So you do not remove the filter cake to the sufficient amount to arrive at the desired success unless we introduce the fluid containing the material other than the colloidal material found in the drilling fluid, and by abrading during that period, that is, when the fluid is being changed to one not carrying the colloidal material, is when the final end result is best accomplished.

Q. What is this fluid that is fluid other than that containing the colloidal material, Mr. Wright?

A. Well, in cementing operation the fluid would be water carrying any cementous material, although it may be oil to condition the well, to carry away the abraded material, scratched-away material, although there have been other fluids introduced such as cementation, shall we say, by asphalt and let it

(Testimony of Kenneth A. Wright.)

solidify in the same manner as the cement mixed with the water; but the end product is the [3061] same in the operation, carried out mechanically the same.

Q. And that end product is what?

A. The formation face has been abraded to the extent of removing the deposited material, which was the period during the drilling phase, and you have a clean formation face, a firm bond with the cement, contact bond with the cement being the usual objective.

Q. Mr. Wright, you had testified in a prior sequence of events up until the time that you had filed the application for the patent, Exhibit 37.

Following that filing of that application—I believe that was in August of 1939—did you do anything further with the development of this solution to this problem of well conditioning? A. Yes.

Q. What?

A. I started to design a tool or device which could be used on the casing to be set in the well to carry out this method.

Q. And when was that?

A. My recollection is I started in July or August, possibly a little earlier.

Mr. Scofield: Of 1939?

The Witness: 1939.

Q. (By Mr. L. E. Lyon): You started to design this [3062] tool. What tool was it that you designed, if any, at that time?

A. I was desirous of having a tool which would

(Testimony of Kenneth A. Wright.)

scratch the surface of the casing, surface of the well bore, that was to be mounted on the casing that was to be set in the well bore and have it of a construction that would do the work required when in position in the well and, at the same time, not losing sight of the very important point that the casing with the devices on it had to be run into the well bore, it being practically a first basic premise in the industry that drilling the hole is one thing and casing it is another, and a drilled hole without casing is of no value.

Q. All right. Did you design such a device at that time, in July or August or whatever time it was in 1939?           A. Yes.

Q. And what device was that?

A. That is a device which is an exhibit here which I do not see before me, but it is called B & W wall-cleaning guide.

Q. Well, there is quite a boxful of exhibits here, Mr. Wright. Maybe you would desire to pick out one of them as the one that you have in mind. Will you do that, please?

(Witness selecting exhibits.) [3063]

You have picked out quite a selection of exhibits, Mr. Wright. Will you just identify those by the exhibit numbers, for the purpose of the record? Take the exhibit that you picked out first.

\* \* \*



(Testimony of Kenneth A. Wright.)

The Witness: I have before me at this time Exhibit 104, is that correct?

The Reporter: Yes.

The Witness: That is a scratcher I elected to call a wall-cleaning guide, which the trade knows as a scratcher.

I have another one here, which is Exhibit FFFF, which again is a scratcher known by B and W's advertisement as a wall-cleaning guide, called a scratcher by the trade.

I have another exhibit here—— [3064]

Q. (By Mr. L. E. Lyon): Exhibit CK.

A. Which is termed "CK," and that is a scratcher manufactured by B and W and designed by me, and again it is called a scratcher.

Here is another, Exhibit IIII, and that is a scratcher designed by me.

And all of these are called scratchers, and the device which I designed.

Q. After you had designed the scratcher as you have stated, as illustrated by these different exhibits, what did you do with it, Mr. Wright?

A. During the period of development of this device, which would be about October and November, I do not exactly recall the exact dates, and at a time when this device had advanced to the point where the base structure, that is, the torque mounting of the wire on the sleeve, and the clip, and this wire extending outwardly to abrade, scratch the well bore, and the wall of the well bore, I was informed, I believe by Mr. Barkis or someone else,

(Testimony of Kenneth A. Wright.)

that the Union Oil Company had started a project to do some testing and research into the reason for repeated failures of cementation, and that the project was in some manner to be finalized as a report to be given by the American Petroleum Institute at their spring meeting in March of 1940.

At the time of learning of this, I was informed that [3065] this series of tests, or whatever they might be termed, were to be conducted by the Union Oil Company field-research men, a Mr. Jones and a Mr. Berdine, at a location on Dominguez Hill adjacent the drilling wells, actually drilling, in the process of drilling at the time; and that all manufacturers that had equipment which might be used in that particular phase of the drilling completion of an oil well were invited to bring their equipment and have it used by the Union Oil Company in this series of tests, and this device to be used in that particular part of oil-well-completion operations was submitted by me, and at that time Mr. Barkis was with me, associated with me, and it was to be used in the demonstrations and tests there at Dominguez Hill; together with instructions of the supplier to the Union Oil Company men of how the equipment was to be used in the standardized equipment which they had developed there for the purpose, it being understood that they would follow out rigidly the individual manufacturers' specifications for everything, such as how to mount it on the casing and whether to reciprocate it, rotate it, or whatever their individual requests were.

(Testimony of Kenneth A. Wright.)

Q. Did you deliver any equipment at that location to Messrs. Jones and Berdine in these tests?

A. Yes.

Q. Did you see and have explained to you the test apparatus that was to be used? [3066]

A. Yes.

Q. Did that test apparatus follow any recognized procedure with respect to filter-cake observations, Mr. Wright?

A. Yes.

Q. In what respect?

A. Well, we were dealing with this basic premise, that wherever you have permeable strata or section and have a colloidal material in suspension in fluid, and one is applied to the other, the result will be a deposition of filter cake on the permeable section, be it filter paper or canvas or the wall of the well bore, they all being identical in their fundamental premise.

Q. Now, is there any recognized procedure for testing of drilling fluids with respect to the deposition of filter cake, Mr. Wright?

A. Yes. I do not recall the date of the adoption by the A.P.I. of some of the apparatus, but there have been for many, many years standard procedures for determining a few of the very pertinent points to be observed of the drilling fluid, such as the rate of filtration, the thickness of the filter cake under a standard condition, and the viscosity measurement.

Q. Now, is that recognized procedure, to utilize

(Testimony of Kenneth A. Wright.)

the deposition of a filtrate in making the determinations?      A. That is correct. [3067]

Q. Upon what type of medium?

A. Upon a piece of filter paper placed in an apparatus.

Q. And how does that filtering operation compare with what Jones used in these tests?

A. It is identical in basic premise, but Jones enlarged it to where he simulated the well, by keeping and never departing from this basic premise of deposition of colloidal material upon the permeable section.

Q. In that test operation, what took the place of the recognized filter paper?

A. The canvas lining placed inside the steel cylinder.

Q. And what took the place of the permeable strata?

A. Well, the canvas is the permeable section permitting the filtrate to pass into it and through it, and by removing it in that way, and we have the same hydraulic system in motion as we do at the well, and this simulated well, as I recall it, was 15 feet in length and having a diameter of—the steel cylinder was, I think, seven inches, according to my recollection, and the canvas lining inside of that, which would make an inside diameter of approximately six and seven-eighths—we assume that this canvas was one-sixteenth of an inch—and so Jones duplicated with complete fidelity the conditions found in the well bore and carried out the tests,

(Testimony of Kenneth A. Wright.)

and at the same time he used mud from a central drilling pit which was actually the mud from wells which were [3068] drilling, and where the mud was returned from the bits of the drilling wells to be conditioned and pumped back to the wells through the mud lines, to the various wells. And in his report he makes observations on viscosity and a few things—I don't recall them all—which are the standards used by the industry for many, many years.

Q. Now, you have used the expressions “drilling mud” and “drilling fluid,” and I believe we have used them in this testimony. Just so the record may be clear, what is the drilling mud?

A. Well, if you mix water with the clays and shales in the earth, you get mud. You might say that is very old.

But, in the drilling of a well, it so happens that some very, very unusual phenomena take place. Now, the formations of the earth, speaking of the sediments, are composed principally of shales, clays, and varying mineral compositions between, together with the sands.

Now, in the clay-sand group, viewed as a large group, we find that a large part of them come within the classification of kaolins, and within the kaolin group we find, under better examination, a more specific classification, such things as Illete and Montmorillinite, and those are present in varying amounts in all the sediments of the earth.

Now, this kaolin group, of which there is a substantial amount in all the clays and shales, has a

(Testimony of Kenneth A. Wright.)

peculiar [3069] characteristic, in that they are mineral colloids, it being recognized we have organic colloids and mineral colloids.

Now, these mineral colloids have peculiar behavior when suspended in water, in aqueous media. And it is that particular phenomenon which makes good drilling mud.

Now, the colloids, that is, these mineral colloids, stay suspended in the water as long as we have the water, let us say, fresh or pure, that is, if we do not introduce chemicals to unbalance it.

Now, the suspension of these colloids in the water is something of a—it should be observed this way: if the fluid moves or reacts to any hydraulic law, the colloids will react with it. They are suspended in the fluid to a point of being part of its specific gravity, let us say, that is, the weight of the composition of the colloids and the water is a unit.

Now, in drilling a well and starting with either mud from a formerly-drilled well or starting with water, if there is sufficient clay at the surface to make mud right at the first foot, that is, there are places where we can just start with water and within the first five feet be making a reasonably good rotary drilling mud; and at other places, where it is too sandy, we always provide these with mud from a previously-drilled well or mud by getting suitable clay, such as Illite or Montmorillinite, and mixing it [3070] with water, and have that available. But while we are drilling the well, as the bit advances,

(Testimony of Kenneth A. Wright.)

we obviously—we use the expression “making mud”—we get mud where it has become so viscous that we have to add water to it, because we are drilling in materials which are good mud-base materials themselves. Now, that is the drilling mud we use.

Q. What is the function of the drilling mud in a well?

A. Just a minute. I am addressing all this to water-base muds as distinguished from oil-base muds, because there are such things available in the trade. They have come in recently, and so there won't be any confusion I am addressing my statements to water-base muds.

Q. What is the drilling fluid or what is the drilling mud used for in drilling a well, what is its purpose or function?

A. The drilling mud serves to prevent loss of fluid into the permeable strata by slowing down the filtration rate of the fluid into this cake that is being deposited on the permeable strata. It provides a lubricant and coolant for the bit. It provides the transportation means for bringing to the surface the cuttings that the bit makes during the drilling operation. And it also provides the hydrostatic head, as in terms of pressure pounds per square foot or inch, rather, on any permeable strata where fluids might be found, or gas, which would have a pressure sufficient to cause a [3071] blowout, that is, the direction of flow would be from the sand strata into the well, rather than the direction of flow being outward.



(Testimony of Kenneth A. Wright.)

Those are the general premises.

Q. When you observed this demonstration of equipment that Jones and Berdine were going to use for the Union Oil Company at Dominguez Hills were you or were you not satisfied that the procedure to be followed was representative of conditions which would be found in the hole and were sufficiently recognized in the industry to give a true and exact test, Mr. Wright?

A. As far as I am concerned, it was a complete demonstration, the size of the equipment, the procedures that were carried out, everything presented was suitable for transportation of all the basic demonstrations there, in fact, all the detailed demonstrations to put it in the oil well and carry it out in the well itself.

Q. Did it follow recognized A.P.I. [3072] procedures?

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, you have testified that there was a recognized procedure for testing drilling fluids, an A.P.I.-recognized test, is that correct? A. That is correct.

Q. Do you have anything here in the courtroom which will illustrate any equipment for usage of that recognized procedure?

A. There is a composite catalog which I have available here somewhere which contains illustrations and a test to support them.

Q. Is this the composite catalog you have in mind?



(Testimony of Kenneth A. Wright.)

A. I have in my hand the "Composite Catalog of Oil Field and Pipeline Equipment, 1948, 16th Edition, Volume I," and that is a section of the catalogs which are supplied by the Baroid Sales Division which I believe is an affiliate of the National Lead Corporation.

We find apparatus which is used to determine those characteristics of the drilling fluid which I previously stated, such as filter-cake thickness, viscosity, and the amount of filtrate produced during any one of the tests followed out. Together with that is this, the device for determining the specific gravity or the weight per gallon or weight per cubic foot, whichever way you wish to report the weight of the fluid, and those are found on pages 540, 541, and 542 of the composite catalog which I have previously [3074] identified.

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, you have referred to this literature for what purpose?

A. To show that Mr. Jones, in carrying out these demonstrations, followed procedures which the industry had recognized, as the engineers and technicians in that particular part of the drilling and producing of wells had known for several years, ten years approximately to my knowledge, as piece by piece all of these operations became standard procedures, and I quote here from page 540—— [3075]

\* \* \*

Q. (By Mr. L. E. Lyon): I just wanted to get, before you complete your answer, what the business,

(Testimony of Kenneth A. Wright.)

to your knowledge, of the Baroid Sales Company is, Mr. Wright. Just answer the question and then go on.

A. The Baroid Sales Division of National Lead are one of the biggest suppliers of this apparatus which is used by the mud engineers and the industry at large in determining these particular qualities and characteristics of the drilling fluid.

Q. Well, do they have any business in selling materials for rotary and mud itself?

A. They are big suppliers of every——

Mr. Scofield: We will stipulate that, your Honor.

The Court: Will you accept the stipulation?

Mr. L. E. Lyon: I will accept the stipulation.

The Witness: If I may squeeze this wording in here:

“Operation of the Balance follows A.P.I. recommended practice (Code No. 29, Second Edition, July, 1942), as follows:”

And I believe if I would read this further, I would find further confirmation.

The Court: What are you reading from?

The Witness: This is page 540 of the Baroid Sales Division advertising material in the composite catalog. [3076]

The Court: Is that an exhibit?

Mr. L. E. Lyon: That is not an exhibit yet, your Honor.

We will offer the particular pages referred to by

(Testimony of Kenneth A. Wright.)

the witness, which are pages 540, 541, and 542 of the 1948 edition of the "Composite Catalog," the 16th edition, I believe, isn't it, Mr. Wright?

The Witness: Correct.

Mr. Scofield: I object merely to its materiality, your Honor.

Mr. L. E. Lyon: As exhibit——

The Clerk: FU. [3077]

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, these tests that were carried out using this apparatus at Dominguez Hills—and did you supply, yourself, personally, equipment for use in those tests?

Mr. Scofield: We will stipulate that, your Honor.

Mr. L. E. Lyon: Accept the stipulation.

Q. What was the equipment that you provided, Mr. Wright?

A. According to my present recollection, there were two scratchers supplied initially for use for Jones in the apparatus which he had set up there at Dominguez Hills.

Q. Are those two devices illustrated or shown or exemplified by any exhibit here in evidence?

A. I don't know what you mean by "exemplified."

Q. Well, is there a replica of those devices here in evidence?

A. The device before me, IIII, is identical, with the exception that on the extreme outer end it did

(Testimony of Kenneth A. Wright.)

not have this particular sidewise motion or sidewise direction, and extended outwardly more or less to a sharp end from the [3081] collar or sleeve of the scratcher.

Q. I would like to have you explain—and if you have any models or devices which have been not here so far identified—the precise construction and principle of the scratchers which you first delivered to Jones and Berdine, explaining how they are constructed and how they were intended to operate, Mr. Wright.

\* \* \*

The Witness: I am still a little bit uncertain as to——

Q. (By Mr. L. E. Lyon): Mr. Wright, in these scratchers that you provided Mr. Jones and Berdine there were certain [3082] elements and parts of the scratchers, were there not?

A. That is correct.

Q. What I want is the whys and wherefores of all of those parts of that scratcher; and if you have any models or devices which will enable you to demonstrate the construction and the principle of the scratchers that you provided, I want you to use those in giving your explanation, other than this chart before you. I believe you have some broken-down models which have only one wire on them which would illustrate the construction upon the complete device, and I wanted you to use those.

\* \* \*

(Testimony of Kenneth A. Wright.)

Q. (By Mr. L. E. Lyon): You have before you a device which has been heretofore marked by me as——

A. Exhibit EB.

Q. ——Exhibit EB.

A. This Exhibit EB is a skeleton-like structure to demonstrate the basic construction of the devices which were taken to the Jones tests. They constitute a collar or sleeve, those two terms being identical, and a clip affixed to the outside of the collar or sleeve, a spring steel wire [3083] passing partially around the circumference of the sleeve, and I mean the outer circumference or periphery, and held in position by these clips which have slots in them so as to keep them in alignment and more or less aid in their mechanical performance.

After passing around the sleeve for the required distance in the outer periphery the wire goes through an arc and then extends outwardly. And in operation, when it is placed in the well, the first part of the device to yield to the putting of the device into a well bore in which the diameter of the well bore is less than the outer diameter of the wire ends, the section passing about the periphery absorbs that torque action and, as we tilt the wire upward, as on the down-stroke, we get this torque action and we get some abrading action or scratching action on the wall of the well bore at the time you are making the downwardly descending motion into the well bore.

The clips are only for positioning the wire and holding it in place, and not welded or fixed to it in

(Testimony of Kenneth A. Wright.)

any manner other than the extreme end which has a hole in it, the clip on the extreme end which has a hole in it to make fixed the other end, so we have the length of wire passing about the periphery as a torque section.

Q. In an ordinary construction how many of those clips are there used to hold each wire in [3084] place? A. 10 clips.

\* \* \*

Q. Does your answer, eliminating the word "ordinary," also apply to the structure that was supplied Jones and Berdine in the first test?

A. That is correct.

Q. All right. Now, as I understand your explanation, then, you have a collar and this scratcher that was supplied to Jones and Berdine had a collar. On the outside of the collar is a plurality of these clips which are welded to the collar?

A. Correct; the clips are.

Q. The clips are. Now, the wire, which is the scratching element, is it not?

A. That is correct.

Q. Embodies two parts—a part that extends free away from the collar, a part where there is an arc formed in the wire, and then the part of the wire which extends around the periphery of the collar and terminates in an upturned end which is locked in one of the clips, is that correct? [3085]

\* \* \*

A. That is correct.

(Testimony of Kenneth A. Wright.)

The Court: The part of the wire that extends around the periphery of the collar also extends under the hole or loop in some of the clips, does it not?

The Witness: Yes, your Honor. I described those as slots.

The Court: Slots in the clips?

The Witness: Yes.

Q. (By Mr. L. E. Lyon): This portion of the wire——

The Court: How many of those clips, other than the clip at the end of the wire, are welded?

The Witness: 10 clips are utilized for each wire, having in mind that each clip also serves for other wires by progression about the periphery of the sleeve.

The Court: In other words, as to each wire one end of the wire is welded to one clip, that wire extends around the periphery of the collar through a slot in nine clips and then protrudes outward a distance from the collar, is that it?

The Witness: That is correct, your Honor, with the [3086] exception there is no welding of the wire to the clip. It passes through the hole. Welding of spring steel is not good metallurgical practice.

The Court: I misunderstood you. Then how is the end of the wire finally made secure?

The Witness: This hole here turned outward from the collar, right there, that is the end of the wire I am pointing to at this point. That is its end passing about and outward.

(Testimony of Kenneth A. Wright.)

The Court: What makes it secure, that hole?

The Witness: It passes through a hole, the profile of the wire comes back and turns this direction, and that is the anchoring point. Passing through the hole and the clip itself is welded to the sleeve at these points here where I am indicating.

The Court: So one end of the wire is anchored under one clip, instead of welded to the clip?

The Witness: That is correct. But pardon my correction, but welding of spring steel to this is not permitted metallurgically.

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, what is the function, if any, of this curved portion of the wire which follows the periphery of the collar and is the portion which extends under these nine or 10 clips? What is its function, if any?

A. That is the part of the spring steel wire which [3087] provides the energy to cause the wire end, outer end I mean by that, to do the scratching. If there were no torque section there to supply energy, the wire would fold back against the collar and probably remain there.

Q. You have used the word "torque." Now, what do you mean by that?

A. Well, the twisting of a rod or any piece of metal or wood is the torquing. When you apply twist you are torquing it.

Q. How does that compare with a spring?

A. It is identical—with what?

Q. With a spring.

A. Well, it is a spring.



(Testimony of Kenneth A. Wright.)

Q. Oh, it is a spring?

The Court: You are referring there to the tendency of the wire to return to its original position?

The Witness: That is right, your Honor. That is correct.

The Court: And these holes through these various slots afford an opportunity for the wire to wind up?

The Witness: That is correct.

The Court: The spring to wind up, and gives a play in which to do it, is that correct?

The Witness: That is correct. Wind up is a good expression there, there being no fixed relationship between [3088] the slots and the clip and the wire to prevent it from winding up.

Q. (By Mr. L. E. Lyon): In your explanation before, you stated that the end of the wire performed the abrading. Is that true in this model that you first presented to Jones and Berdine, or these two structures—I don't mean "models"—the two scratchers?

A. That is correct. They extended outwardly and terminated in a sharp end.

Q. What happened to these first two? I believe that is shown in the transcript of your testimony before given, that the first two ripped the bag, is that correct?

A. I didn't see them rip the bag and it is reported to me that that is what happened; that they used them to the point that they finally cut a hole in

(Testimony of Kenneth A. Wright.)

the canvas sack and let some mud fluid escape, and so they terminated that particular run.

Q. Did that cutting action at the end of the wire demonstrate anything of the abrading characteristics of such a wire scratcher?

A. That is the desired objective, is to abrade the wall or well bore.

Q. You carried on three other determinations with Jones and Berdine, in which I believe your testimony shows that there were wires in different forms, is that correct? [3089]

A. That is correct.

Q. And terminated in the structure shown in Figure 26 of the Jones and Berdine report, is that correct? That was the last form of structure used?

A. That is correct.

Q. And that last form has the ends of the wires formed in a certain way. Did that have anything to do with the abrading of the well, Mr. Wright?

A. Yes, directly, very directly.

Q. And how?

A. In order to prevent the repetition of cutting the canvas bag again, I resorted to putting little beads such as are demonstrated on the ends of the wires on Exhibit IIII, so that it would not cut the bag yet would demonstrate the abrading action or scratching action of the wire ends against the wall of the well bore.

Q. Following the completion of these tests of Jones and Berdine did B & W sell any scratchers to anyone? A. Yes.

(Testimony of Kenneth A. Wright.)

Q. To whom did they sell scratchers first?

A. To my recollection, a company known as Thomas Kelly & Sons.

Q. Where were they located, or was that sale to a particular well?

A. Well, pardon my correction, but it was sold to the [3090] company, Thomas Kelly & Sons, for use on a well.

Q. Where was the well located?

A. The well was located in the Rosecrans field on South Main Street, here in Southern California.

Q. And you, personally, I believe your testimony already in the record shows, that you personally delivered 23 scratchers to that well?

A. That is correct.

Q. And those scratchers were of what construction?

A. The scratchers delivered to the Kelly well were of the construction of Exhibit FFFF.

Q. And how does Exhibit FFFF differ from the wall-cleaning guide of Exhibit 104, Mr. Wright?

Mr. Scofield: The exhibits themselves, your Honor, are the best evidence.

Q. (By Mr. L. E. Lyon): If at all.

The Court: They may not be. There may be some opinion an expert could give with respect to the operation. Overruled.

The Witness: Would you mind repeating the question?

Q. (By Mr. L. E. Lyon): How does FFFF differentiate from Exhibit 104, is the question?

(Testimony of Kenneth A. Wright.)

A. Basically they do not differ at all. They might be a little more sidewise angle after leaving the periphery, but in operation they are essentially the same in the well. [3091] An observed difference can be made while running in.

Q. You say that Exhibit FFFF has a greater angular inclination or a different angular inclination—I forgot your exact words—than Exhibit 104. Will you explain what you meant in that?

A. Well, these wires, starting with the end which is affixed to the clip by having its end pass through the hole, passes around the periphery, passes through an arc and extends outwardly. And in the——

Q. You are talking now about Exhibit 104?

A. 104. And Exhibit FFFF, that arc at the base is just a little bit greater curvature, the radius being increased at that point.

Q. Do both of these structures, as I understand your testimony, have sidewise inclination of the wire fingers?      A. That is correct.

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, will you explain how the scratchers of the type of FFFF, 104, or IIII are mounted on a casing for use in an oil well or in the Jones and Berdine demonstration? If there was any difference, state [3092] what the difference was.

A. In Exhibit IIII Mr. Jones carried out my requests and mounted the device in the manner

(Testimony of Kenneth A. Wright.)

shown here in this exhibit. That is, it was limited in vertical travel on the casing to about six inches and was rotatably mounted between the two rings which are positioned on this section of the casing.

It was my first idea that these stops should be made of a piece of rod which is common to field operations in oil wells, and we called a welder out to the job. A welder in the oil field languages is a man having a small truck upon which is positioned a set of welding equipment, both acetylene and electric, because the jobs he goes to require electric welding, are welding, that is, some require acetylene welding and some require operations for cutting. So the welder that comes to the job will always have welding rod, cutting torch, welding torch, and electric arc welding equipment; and he has it in a substantial quantity because he does not know how long the job will be. It might be two hours or it might be six or eight hours. He doesn't know.

So it was my intention to provide a very neat stop, such as I indicated on this IIII exhibit, which would——

Q. I believe the casing itself has a different number, Mr. Wright.

A. The casing is CF, I find. But the point of it is [3093] that this stop would be completely uniform circumferentially and not interfere with this scratcher rod at either end during this reciprocating stroke which takes place in the well.

And, as I say, a welder who comes to the job always has lots of welding rod. It took more time

(Testimony of Kenneth A. Wright.)

to make these rings than I had imagined, so the next step was to resort to a building of a lug. And there, again, I took the precaution of telling him to build the lugs sufficiently high and of a particular structure or configuration so, again, they would not interfere with the scratcher being free to travel vertically and rotatably.

And there is an exhibit here which we called our instruction sheet for a short time——

Q. Exhibit HH. I just asked for it.

A. I have in my hand Exhibit HH and the instructions for mounting the scratcher on the casing are as follows:

“Build four beads evenly spaced on casing, one-quarter-inch thick, with arc weld at the lower lug.”

It says “a set of lugs”—pardon.

“Build beads to have square shoulders as indicated.” Meaning that this device would not be frozen or bound or ride upon the bead and become locked and inoperative.

Q. I place before you two devices, one a [3094] casing which I have marked Exhibit ED and the other containing a scratcher marked Exhibit EC. I will ask you what that model is and why you prepared it?

A. This model, which is composed of Exhibit EC, together with Exhibit ED, demonstrates what is shown in Exhibit HH by following out those instructions. The beads are not as square as indicated there, but, again, I found that I had to stand over the welder and practically take the job in your

(Testimony of Kenneth A. Wright.)

own hands in order to get the thing quite as engineeringly perfect as it indicated in this drawing.

So this arrangement, as I have previously identified here in my hand, shows what was adopted as the standard practice; and that is what is shown in our Bulletin 101 which appeared about a month after this Exhibit HH, though the beads do not have this perfect engineering end point, because that is just a little bit difficult to obtain in field practice.

\* \* \*

Q. (By Mr. L. E. Lyon): Will you proceed with your answer? And the question was to describe the operation of these scratchers as they were operated in the Jones and Berdine well and at the Kelly installation, explaining any difference [3095] between the structures or operations that were performed in either case.

A. The devices were all mounted rotatably between stops. The difference between the stops in the field being about 12 inches. On the Jones they are slightly less, but they are free to rotate and free to slide for the distance shown between the stops.

That manner of mounting was carried out at the Kelly well the same as with Jones, except for the substitution of the lugs for the welding rod made into a ring and positioned for use as the stops.

The device when lowered into the well has an outside diameter greater than the bit diameter, so that when lowered into the well, as soon as the wire ends take contact with the wall of the well bore or the



(Testimony of Kenneth A. Wright.)

interior of the casing that may have been set in the well bore, the device is then pushed, in effect, down the well bore by the upper set of lugs and the wires at that time are tilted upwardly.

Q. Demonstrate their manner of tipping.

A. They are restricted; in other words, that is, at a reduced diameter and upwardly.

Q. All right. What part of the scratcher wire is in engagement with the wall of the hole?

A. The outer end of the wire is in contact with the wall of the well bore. [3096]

Q. Now, that continues, I presume, until the casing is lowered to its desired point in the well, is that correct?

A. With the exception that the casing is supplied to the well in joints. We do not have casing in such long strings. We have to have individual joints, and so we screw them together joint by joint into the preceding joint, and then—and I am going to turn this upside down so that it resembles what we see in the oil field of having the thread end down rather than up—and, as each succeeding joint is pulled into the derrick and screwed into the collar of the previous joint, an operation is required which is known as freeing the slips or getting the slips out, several different expressions, but in effect it means that you must lift the casing slightly in order to remove these devices which hold the casing from falling into the well. [3097]

Now, at that time the scratcher is actually against the upper lugs, when that particular operation takes



(Testimony of Kenneth A. Wright.)

place, so if the driller does not pick up the casing too far, the casing goes upward, the scratcher stands still, and, as I previously stated, depending on the amount of upward travel that the driller makes when he picks up the pipe to free the slips, the scratcher will stand still. If he gives it more than this distance (indicating), then he will start pulling the scratcher up the hole and start abrading upon the upward stroke.

If he picks it up any distance less than this (indicating), then, as he lowers it down, the scratcher travels downward, being followed by the upward plug.

So, joint by joint, we put the casing into the well to the required depth that the operator is intending to carry out the setting of the casing in the well.

Q. (By Mr. L. E. Lyon): All right. Now, you have got it down at the bottom. Then what do you do?

A. Well, there are lots of operations that take place in between times, but when we do get it to bottom, assuming we have carried out these other operations, such as keeping the casing full, or whatever type of running operation you might have carried out, the next operation is to put on the casing head. It is also called a circulating head, and it is used in order to connect up the fluid system and, by [3098] attaching, screwing it into the upper end of the casing, this head, together with a hose con-

(Testimony of Kenneth A. Wright.)

nected to the drilling mud system and the pump, you establish circulation, so-called, or break circulation, meaning that mud and fluid is sucked up into the intake of the pump, passed into the hose and down the casing, out the lower extremity through the shoe and returned upward in the annulus, and that is breaking circulation or establishing circulation.

As soon as circulation has been established, you should start moving the casing, and in the use of this type of scratcher, which is a reciprocating type, you start the abrading of the well bore while circulating this drilling fluid, and the distance apart——

Q. And you continue that for how long?

A. That depends upon the individual opinion of the operator, and there is considerable variance in engineers' and drilling superintendents' ideas on how long they should do that.

Q. Well, is that the time that you are scratching the permeable formation?

A. The scratchers are positioned opposite the permeable strata, and some operators lap them over into the area above and below the permeable strata; and at the time that you break circulation, you start removing the primary filter cake, that is, the cake which has been deposited [3099] during the period that you did drilling, together with the accumulation that took place during the period that the well was quiescent, wherein you withdrew the

(Testimony of Kenneth A. Wright.)

drill pipe, rigged up to run casing, and got the casing back to bottom.

Q. I notice in these scratchers, like Exhibit IIII, and the scratcher Exhibit EC before you, that there are a half to three-quarters of an inch that separates the ends of the wires at their outer periphery. Do these act to peel the mud off the formation?

A. Well, I can't associate the word "peel" with what my concept of it does, because it is not the nature of—mud cake is not something that you could peel off.

Q. Then is it necessary to have the wire ends contact the entire periphery of the wall in order to perform this abrading operation?

A. No. They do not.

Q. The wires, then, in this operation, do they just travel up and down in the same path at the wall?

A. No. They do not.

Q. Then what do they do?

A. As the driller reciprocates the casing up and down for a distance greater than the distance between these stops, that is, the time that the scratcher does the abrading, and at the top and bottom of each of these strokes, the wires are required to reverse in the upward or downward position, [3100] depending upon the direction of the previous stroke, and impart a rotating motion to the sleeve, and as the scratcher then moves in the opposite direction, it moves over and scratches a new path. So, as he continues this operation, he is abrading, scratching the entire wall surface of the well bore in the area

(Testimony of Kenneth A. Wright.)

where the scratchers are positioned on the casing.

Q. What causes this scratcher to move as you have stated, to change the position of the wires? How does that work?

A. Well, as I have just stated, these wires are spring steel, they are of a dimension that permits a certain amount of flexing, and because of this curved relationship into the—in against the periphery, starting at the end of this—at the point where the wire in coming around the periphery, before extending outwardly, acts as a—imparts a rotating motion first on the scratcher sleeve, and it being free to rotate on the casing and limited in vertical travel to these stops, we get this shifting about on the upper and lower ends of the scratcher stroke on the casing.

Q. Does that operation have any name that has been used, Mr. Wright, as applied to this particular type of scratcher?

A. Yes. In that exhibit you have in your hand there——

Q. Exhibit HH. [3101]

A. ——if you will return it to me—in the first line of the instructions for handling of the casing, as we see, it says, “Upward movement of casing exceeding one foot reverses wire guides,” reversing the wires and getting this rotating action.

Q. And, from that, have these scratchers obtained any particular name, or have they been referred to by their operation as any particular type of scratcher?

(Testimony of Kenneth A. Wright.)

A. Well, Mr. Hall has adopted the word most extensively and we haven't, and in our advertising literature we mention the fact that—repeatedly mention it—but beyond that we haven't attempted to exploit it by commercial advertisement.

Q. What is the designation that Mr. Hall uses, when?

A. Well, throughout all of his literature, starting with about 1942 or '43, I don't recall which, he starts calling his device a reversible scratcher.

Q. And that "reversible" then refers to this function that you have just described, is that correct?

A. That is correct. [3102]

\* \* \*

Q. I believe, Mr. Wright, that you were partially through your description of the mode of operation of these wall-cleaning guides in the different forms as shown by these exhibits, as that mode of operation was carried out in the Jones and Berdine test wells and in the Kelly wells. Will you proceed with that? [3118]

\* \* \*

A. In reply to your question, Mr. Lyon, and addressing myself to Exhibit IIII which is mounted on casing—just a moment. Which is casing and which is the ring? Is CF the casing?

Mr. L. E. Lyon: CF. [3121]

\* \* \*

A. As previously explained, the outside diameter of the wire ends is greater than the hole in which

(Testimony of Kenneth A. Wright.)

it is to be placed for use, that is, the greater diameter being accepted as the first index of the hole diameter to take recognition thereof. As the device goes into the hole and is pushed down by the upper ring of the casing, the upper stop ring I mean by that, the wires are bent upward and the ends are restricted inwardly so that the outside diameter of the wire ends is equal to the diameter of the hole at which it finds itself positioned. And when it does that, that places this torque section into twisting action and that torque section and the wire itself becomes more sidewise inclined because of the restriction in the reduced diameter from what the device was in its static condition, and, as it goes downward to the point where the operator or driller requires a reversal of the direction, and when he does the casing rises upward, the device stands still until the lower stop ring contacts it and starts pushing it up. At that time a force is exerted through the [3122] wire through this sidewise action, sidewise direction, I should say, down onto the periphery of the sleeve, and the result, it shifts over, which means rotating on the casing, and then in the upward stroke the wire end is drawn over to the new upward stroke and so on as long as the operator reciprocates the casing for a distance greater than the distance between the stop rings.

Now, the same operation is carried out in each of these devices and there is a force——

The Court: By “these devices” you are referring to exhibits?

(Testimony of Kenneth A. Wright.)

The Witness: Exhibit 104, Exhibit FFFF, and Exhibit CK and, yes, this one, EC, which is mounted on Exhibit ED. The mode of operation basically is all the same.

Q. (By Mr. L. E. Lyon): I have heard the expression used that this results in the wires "hunting." Do you understand what is meant by that, Mr. Wright? A. I believe I do.

Q. As applied to this, what do you understand that to mean?

A. Well, my understanding of it is that the rotation of the collar and resultant movement of the wires around the periphery of the wall of the hole might not be in exact mechanical precision, so that, in view of the fact that the hole may be partially out of round and these things, being [3123] spring members, there would not be mechanical precision operation during that period so the wires would move over and, as we have expressed it, hunt for the next position to it on the upward stroke or the downward, whichever the case might be.

Q. You have prepared, Mr. Wright, I believe, a model to illustrate the position of one of these scratchers in a hole or casing, and that model has been marked Exhibit EA. Will you explain that model and its purpose?

Mr. Scofield: What is the exhibit number?

Mr. L. E. Lyon: Exhibit EA.

A. Exhibit EA contains a scratcher identical to Figure 26 of Jones placed on a three and one-half-inch mandrel.

(Testimony of Kenneth A. Wright.)

Q. By "Jones," you mean Exhibit X?

A. That is correct.

And taking from Jones the statistical data that the inside diameter of the steel casing which was used was seven inches, and assuming the canvas to be one-sixteenth of an inch in thickness, resulting in inside diameter of that simulated bore hole of six and seven-eighths inches, this outer ring of Exhibit EA is six and seven-eighths inches in diameter. Coupled with that fact is the observation made from Jones that the outside diameter of the wire ends prior to placing them in this device and outer ring of EA, it can be observed that the outside diameter, I think, is seven [3124] and seven-sixteenths inches outside diameter. And if you will—pardon me.

Q. All right. You want this photograph?

The Court: Exhibit?

Mr. L. E. Lyon: It has not been marked, your Honor. It is one that I was not sure the witness was going to use. [3125]

Mr. Scofield: It is in the public-use proceeding.

Mr. L. E. Lyon: I will just ask that this be marked for identification at the present time as Exhibit FV.

The Clerk: FV.

Mr. L. E. Lyon: I will mark it on the back, to save time, FV.

(The document referred to was marked Defendants' Exhibit FV for identification.)

The Witness: This Exhibit FV was obtained in



(Testimony of Kenneth A. Wright.)

ts form that I have it in my hand by reading in Jones the fact that the casing used on which to mount these scratchers was three and a half-inch A.P.I. tubing. This was a three-inch, which in A.P.I. terminology means three and a half inches outside diameter.

The Court: Three inches inside diameter, is that it?

Mr. L. E. Lyon: Roughly.

The Witness: Roughly so, your Honor, and varying with the wall thickness of the tube. By photographic processes, this photograph here is now a three and a half-inch, by direct measurement, that is, by using a standard ruler you can determine the diameter of this tube here is three and a half inches, and by at the same time bringing everything back to the true scale, which the photographic instrument would do, we can measure the outside diameter of the wires as shown in Jones, in Figure 26 of Jones, Exhibit X, isn't it? [3126]

Q. (By Mr. L. E. Lyon): That is right.

A. And so, from that, I determined that the device of the Jones Figure 26 is placed in the cylinder and which carried out the tests and produced the billet known as Figure 27, which is according to my recollection 7 7/16 inches outside diameter on the wire ends. And having gone through that determination, the next step was to produce this assemblage of devices known as Exhibit EA which illustrates the device in the downward stroke, which

(Testimony of Kenneth A. Wright.)

shows the angular disposition of the wires in relation to the periphery in all respects.

The Court: In other words, you took the photograph, Exhibit FV for identification, plus the data in Exhibit X as to the dimensions of the drill pipe and the over-all dimensions of the scratching device, and from that you compiled this physical exhibit, which is Exhibit——

Mr. L. E. Lyon: EA.

The Court: ——EA?

The Witness: That is correct, but the basis of origin is the fact that there is a true dimension established in Jones in that he says there was a 3½-inch outside diameter tubing used.

The Court: Jones gives you two dimensions, as I understand it. He gives you the dimensions of drill-pipe tube and he gives you the over-all dimensions of the scratcher wires? [3127]

The Witness: No, your Honor, he did not give——

Q. (By Mr. L. E. Lyon): It was the over-all dimensions of the scratcher wires that you were seeking to get by this process, weren't you, Mr. Wright?           A. Yes.

The Court: Do you get that from the drill pipe itself?

The Witness: I made that by establishing first a true photograph from that one in Jones, upon which this reads direct, as you can test by a ruler measure, three and a half inches in diameter, this tubing here.

(Testimony of Kenneth A. Wright.)

The Court: In the same photograph you have one dimension and you reduce that to scale and you get the other dimension?

The Witness: That is right. You enlarge it in this particular instance, your Honor.

Q. (By Mr. L. E. Lyon): You took this figure, which is Figure 26 of Jones—— A. No.

Q. Let us get this correct. Maybe I will be doing a little leading here, but you took Figure 26 and you had that enlarged to where the pipe——

A. The tube itself, the casing——

Q. ——to where the casing in Exhibit FV measured directly as three and a half inches, and you might demonstrate that to the court. You enlarged this Figure 26 of [3128] the Jones Exhibit X by photographic processes to where you could measure the pipe size directly on Exhibit FV, is that correct? A. That is correct.

The Court: What I was trying to understand—and if I didn't, correct me—is why is it necessary to enlarge the photograph? Assuming that the drill pipe was three and a half inches, the outside diameter, and knowing that the photograph is a photograph to scale, I suppose, and you have it photographed to scale, couldn't you take your relative measurements and find the other dimensions?

Mr. L. E. Lyon: It could have been done with a proportional divider more directly.

The Witness: Yes.

Q. (By Mr. L. E. Lyon): But you can do it more clearly by photograph than by doing direct

(Testimony of Kenneth A. Wright.)

measurements and that is the way you went at it, so that it could be demonstrated to the court that the physical dimensions were readily readable off of Exhibit FV?

The Court: You can state an equation out of it.

Mr. L. E. Lyon: That is right, you can state an equation.

The Court: Was there any unusual photographic method used here?

The Witness: None whatsoever. [3129]

Q. (By Mr. L. E. Lyon): Just by simple photography?

A. This could have been done by simple equations, but in order to eliminate that—I say that no one made an error in computation, and if you will notice at the top of the sleeve it is slightly under three and a half inches and at the base of the scratcher it is slightly over, so at the middle of the scratcher it is a true three and a half inches, which was the diameter used in Exhibit X, the Jones report.

The Court: But a person could take Figure 26 itself and devise a scale by exact measurements and reach the same result?

The Witness: That is right; take this Figure 26 in Jones as a starting point, that is a known base point, and compare the true to the observed in the same relationship to the outside.

The Court: Whatever measures on the photograph at three and a half inches as to one of the other measurements could be read direct?

Testimony of Kenneth A. Wright.)

Mr. L. E. Lyon: That is correct.

The Witness: That is correct, which is simple algebra. It would be repetitious, but I did it in this way so it could be read direct and it could be more easily applied.

Q. (By Mr. L. E. Lyon): Having made this Exhibit EA, what does it demonstrate?

A. This Exhibit EA, containing the Jones Figure 26, [3130] Exhibit X scratcher shows, as I have stated before, the wire ends in a position to abrade the inner wall of a well. They are under spring tension to carry out the abrading during the reciprocating. The angular disposition of the wires to the collar has increased the sidewise direction due to placing them in the restricted diameter. And so we are observing this angular release of this extended section as well as the angular relationship of the wire as it approaches the periphery of the collar or sleeve, and the clipping has been removed so that the set can be observed without any obstruction whatsoever.

And this wire, which is the top wire opposite the tag containing the designation "EA," shows this series of angular relationships which I have just described.

Q. Now, in regard to Exhibit EA, there is a compression of these spring members, spring fingers, where the outer ends of them hit the inside of this ring in Exhibit EA, is there not?

A. That is correct.

(Testimony of Kenneth A. Wright.)

Q. And that is the point of application of a force on that wire, is it not?

A. That is correct.

Q. Now, what is the effective direction of the application of that force, that is on the end of that wire to the collar? Will you just demonstrate that? [3131]

A. It can be best observed by a line of force from the outer end of the wire where it is in contact with the inner wall of the well bore to where—at the end of the lower arc, and where it makes contact with the periphery of the sleeve itself, and that provides the driving force which results in the rotation of the total device during the reciprocation, provided, as I have stated before, if the amount of reciprocation is greater than the distance between the two stop rings or plugs.

Q. And that is an angular inclination with relation to a tangent drawn at the point of contact. Can you estimate approximately what that angular inclination is, in degrees? Perhaps we have a protractor here.

The Witness: Pardon me. May I have the question repeated?

Mr. L. E. Lyon: Have we that little protractor here?

Mr. Scofield: You are testifying about FV?

The Court: About EA.

The Witness: About EA.

Q. (By Mr. L. E. Lyon): Maybe this protractor is too large, but maybe you can use it to get an ap-

Testimony of Kenneth A. Wright.)

proximation, Mr. Wright, as to what that angular inclination is.

A. If you will provide me with all of it, Mr. Lyon.

Mr. Lyon: Give me that other piece there.

Q. Here is a smaller protractor, too. Here is a smaller [3132] protractor, Mr. Wright, which I think you will be able to read more directly.

A. I have placed in Exhibit EA a device which is a protractor, and the angular disposition of the wire in relation to the point where it touches the periphery can be estimated there, and the line of action, the line of force would be probably 30 degrees, perhaps 25, from the less than tangential, and very tangential, I mean a true tangent.

Q. That is between 25 and 30 degrees, as near as you can measure with the equipment that you have, is that correct? A. That is correct.

Q. All right. Now, take Figure 26, structure of bones. Are the wires' ends formed not only with balls on the ends, but with the section of the wires outward approximately an inch from the collar given an additional sidewise inclination? That is true, is it not, Mr. Wright?

A. That is correct.

Q. And in the structure which was used in the Kelley well, the same as illustrated by Exhibit FFFF, the wires are given not only a sidewise bend, as you have testified, but their outer ends are bent upward. What was the purpose of that upward bend, Mr. Wright?

(Testimony of Kenneth A. Wright.)

A. The upward bend, as shown in Exhibit FFFF, was provided so as to minimize the scratching operation while [3133] running into the well, and what I mean by that is running the casing into the well with the devices mounted thereon.

Q. You mean that from the top of the well to the point of where you wanted the scratching, you were trying to minimize the scratching operation?

A. That is correct.

Q. Now, at the Kelley well, which I believe you have testified to, and the record shows, it was run on December 31 of 1939. Did you encounter any problem which required you to stop lowering the casing into the well?      A. Yes.

Q. What was that?

A. The observation by me was that we were taking from the wall of the well—taking off would be a better statement, an amount of filter cake which increased the viscosity of the fluid mud in the annulus as well as—to a point where it was so viscous the casing became logy, which is an oil-field expression, and would have prevented us from going much farther with lowering the casing in the well unless we resorted to a practice many, many years old in rotary drilling, that is, the running of casing in rotary-drilled holes, what we called breaking circulation while running in.

Q. Well, that is a good expression, but it leaves me kind of cold. What does it mean?

A. Well, the rotary-drilled well, as I have previously [3134] explained, has filter cake of varying



Testimony of Kenneth A. Wright.)

thicknesses on all the permeable strata. When you run the casing into the well, you disturb some of that, you might even take off an excessive amount due to some devices put on there and cause the casing, as I have previously stated, to become logy, and the cure for that, for the particular moment, is to break circulation, that is, to put on the circulating head, circulate and reciprocate the casing until you equalize the mud weight and reduce the viscosity of that fluid in the annulus by pumping it up out onto the surface and conditioning it, and carry on that operation, reciprocating the casing and circulating until a good job is done of the particular conditioning at that moment. When that is done, completed, then you remove the hose, remove the circulating head, and go back to running the casing again, and if the operation requires repeating, then you just go ahead and do it, and that is a practice that has been carried out, to my knowledge and observation, since 1921. [3135]

Q. All right, Mr. Wright, as I understand your testimony which is in your deposition copied into the record, you were actively present throughout the carrying out of this Kelley well operation, that is true, isn't it? A. That is correct.

Q. And was it necessary to stop and recirculate in your operation in the Kelley well?

A. It was necessary in the Kelley well to periodically stop the running of the casing, put the circulating head on, establish circulation, reciprocate the casing, condition the mud for the length of

(Testimony of Kenneth A. Wright.)

hole opposite the point where the shoe is positioned at that time, and then when that casing was good and free, and it was decided by those people present that everything was in good condition as far as the casing in the bore hole is concerned, the operation is completed. Now, I don't remember how many times we did it, exactly, that is, I mean, some five or six times during the total—during the period during which the casing was run.

Q. It was quite a critical event so far as you were concerned, wasn't it, Mr. Wright?

A. Extremely so.

Q. If you had stuck the casing in that well, you would not have gotten anywhere with the sale of these scratchers thereafter, would you?

A. It would have been extremely [3136] difficult.

Q. And that was practically your first commercial operation, wasn't it?

A. According to my recollection it was.

Q. But after recirculating five or six times, you finally did carry out the cementing operation, didn't you?

A. That is correct.

Q. Now, as a result of this operation, did you make any alteration or change in the wall-cleaning guide that you offered to the trade subsequently?

A. Yes.

Q. What did you do?

A. Altered the device to look more like this device here, Exhibit 104.

(Testimony of Kenneth A. Wright.)

Q. That is, you reduced the angular inclination of the wires from the tangent, is that correct?

A. Well, reduced——

Q. You reduced the sidewise inclination of the wires?

A. That is right, reduced the amount of the side-wise inclination.

Q. Did that eliminate the problem of stopping to recirculate in the use of the wall-cleaning guide?

A. In most instances, it does. [3137]

\* \* \*

Mr. L. E. Lyon: Before I get beyond this point, your Honor, and so that the requested stipulation that Mr. Scofield asked with respect to Mr. Sweetzer of the use of wall-cleaning guides, that testimony of Mr. Sweetzer is in his deposition, which is Exhibit BZ-11, on the original, on pages 7 and 8, and the portion to which they are making reference is: He says that at the Kelly well. It was while he was with Kelly they did not use any more scratchers of any kind. But, he says: "After I went to work for the company I am now with we run them on every hole we have drilled." [3147]

"Q. And when did you go with this present company? A. In 1943."

So his testimony is that from 1943 to date he has used them on every well that they have drilled, but for the Kelly well, Kelly never used them [3148] again.

\* \* \*

(Testimony of Kenneth A. Wright.)

The Witness: Mr. Lyon, this device here with 3½-inch tubing contains a feature which I think should be explained, and it is identical——

Q. (By Mr. L. E. Lyon): You mean Exhibit EB or which?

A. EB, I believe it is, 3½-inch tubing.

Q. This one (indicating)?

A. That is correct.

Q. You mean the fact that this tubing, like the other one, can be unscrewed to take the scratcher off?

A. That is correct.

Q. Which is not apparent without demonstration, and that is the reason in the case of Exhibit EB it is broken in one end and threaded in between the welding lugs to permit the scratchers to be removed, which is not a feature which is found in an oil-well drilling casing.

A. Well, the flush joint is common to the trade, but [3153] that particular application is not to be done in that particular manner.

Q. The only purpose of making it this way is so you can get it off?

A. That is correct.

Q. On the back of Exhibit EB—I will call it the back because we have described one face of it—is a section of a Multiflex scratcher wire, or is it a single Multiflex scratcher wire? It might be well to explain that Multiflex scratcher wire and why you have put it on Exhibit EB. Is that merely for the purpose of ease in explanation?

A. This Multiflex finger affixed to this sleeve of

(Testimony of Kenneth A. Wright.)

Exhibit EB is mounted so that the line of extension beyond the periphery is on a radius line.

Q. You mean the scratcher wire where it leaves the collar lies in a radial plane, is that correct?

A. That is correct, and to demonstrate that, when it is flexed into position, in going into operation in the well bore, it takes a position, as we view it from the top, and with the finger opposite the person's body making the observation, then, when this said finger is flexed upward, it takes a position which I will demonstrate, which cants it to the left—correction—which cants it to the right. On reversal it follows in a flexed position and becomes canted downward and to the left. [3154]

And upon being released it turns back to the position in which it was statically when I started the description.

Q. Then, this Multiflex scratcher wire, which is on Exhibit EB, is not mounted in the position that the Multiflex wires are in the Multiflex scratcher as exemplified by Exhibit 57, is that correct?

A. That is correct.

Q. In Exhibit 57 in which way do the wires flex in their different positions?

A. May I have Exhibit 57?

Q. It is right under the pile. That is the bottom one in the pile.

A. In Exhibit 57 the fingers which are being flexed into the well—while being put into a well or a hole of a diameter less than the outside diameter of the wire ends—will assume a position almost vertical, and as you cannot get down in the well to actually observe it, you can only assume that it

(Testimony of Kenneth A. Wright.)

does take a vertical position, and follow down the rim—the wall of the well bore—in an almost straight position.

And upon reversal, it swings over downward and more to the left than the other device I have previously described, which was the finger on Exhibit EB.

Q. The Multiflex scratcher has what I call the bundle of wires which are connected or held together by two [3155] devices which I call ferrules, one which is near the point of emergence of the bundle of wires from the scratcher collar, and the other is out about an inch from the end. What is the purpose of those two ferrules?

A. To bind the assembly of wires together so they operate as a single unit, as a single unit simulating a piece of wire of that diameter, which for some purposes is more flexible and being extremely more flexible than a solid piece of wire of that diameter.

Q. Now, Mr. Wright, does this Multiflex scratcher work on the same torque principle as the wall-cleaning guide?      A. Yes.

Q. Will you just explain how the Multiflex scratcher operates on a torque principle? And by “torque,” I am using the word synonymous with the word “spring.”

A. Exhibit 57, a finger of the scratcher, Exhibit 57, comprising this bundle of wires, has a section beneath the clip extending through the length and beneath the clip and passing around a small metal,

Testimony of Kenneth A. Wright.)

ulated pin, and then returning outward. If you see this piece of wire before it is made up in its present form, it looks exactly like a long hairpin, and this in effect is five hairpins put together in a bundle so we have ten wires at this outer end, and this pin or locking pin, let us call it, at the extreme end here, houses this section of it which is held in this arcuate [3156] section so that when we flex the end we get a torquing of the section which is held in position beneath the clip, and to that extent it simulates the action of the section on the periphery, as this device here, which is Exhibit IIII.

Q. Now, Mr. Wright, is the Multiflex scratcher more or less expensive to fabricate than the Nu-Coil scratcher?

A. It is more expensive to fabricate.

Q. Is it more or less expensive to fabricate than the wall-cleaning guide?

A. It is slightly more.

Q. And the selling price, then, of the Multiflex scratcher with relation to the wall-cleaning guide and Nu-Coil is what, more or less?

A. The Multiflex sells for the most, the wall-cleaning guide for approximately the same, and the Nu-Coil scratcher sells for the least of the three.

Q. Now, you filed, I believe, or caused to be filed, an application for a patent on the structure of the wall-cleaning guide, is that correct?

A. That is correct.

Q. Who filed that application for you?

A. A patent solicitor by the name of James F.



(Testimony of Kenneth A. Wright.)

Abbott, located in the Roosevelt Building here in Los Angeles.

Q. Now, before we get into that, I would like to have Exhibits AY and AZ, and those are two catalogs of the [3157] Weatherford Oil Tool Company, if the clerk please, one being a black-covered one and the other being a blue-covered one.

There has been mention here, Mr. Wright, of what I have heard as the so-called Weatherford formula. I place before you Weatherford catalogs, Exhibits AY and AZ, and will ask you if you find any publication of that so-called formula in these catalogs of the Weatherford Oil Tool Company or the Weatherford Spring Company, and will ask you to explain that so-called formula with reference to your method as you have heretofore described it on the stand at this session?

A. My delay here is due to finding of this.

Q. Page 4920 of Exhibit AZ, the black one, Mr. Wright, I believe, is the first reference you want.

A. Reading from page 4920 of Exhibit AZ, starting at the center of the page, I read as follows:

“The Weatherford Cementing [3158] Formula”——

\* \* \*

Q. Now, my question is, Is that formula any different than the method which you developed?

A. Well, there are some devices used here which do not have any—were not used in what I developed in my invention, but they are accessories which don't fit into the problem at all, according to my



Testimony of Kenneth A. Wright.)

pinion. And, if you care to, I will isolate those which do fit and those which do not fit.

Q. All right, you just go ahead and do it in a way convenient and best to make a comparison or differentiation, whichever is proper.

A. Well, in No. 1, the "Use of the Weatherford Hi-Column Cementing Head" has no place in the operation because the plugs can be released and have been released for many, many years, without stopping circulation.

This particular head that is described here is only a slight adaptation of ideas which are old in the art.

Q. Now, item No. 1 there, Mr. Wright, first includes, does it not, the proposition of continual reciprocation of the casing during cementing? Now, what is common to what you have described, is it not?

A. That is correct.

Q. Now, the remainder of item No. 1 is what you are pointing out now?

A. "Use of the Weatherford Hi-Column Cementing Head" is what I was addressing my first remarks to, before going on [3159] to the next section of that first sentence.

Q. Pardon me?

A. Having commented on the "Weatherford Hi-Column Cementing Head," the part beginning with "reciprocation of the casing during cementing" is exactly what my method describes, and that is in the following—the releasing of the plugs without stopping circulation, that has been done for many years by men, being positioned on the circulating head,

(Testimony of Kenneth A. Wright.)

that is, the head which is on top of the casing, and switching the plugs, and back in the twenties, I don't remember who the manufacturers were, they were working with heads of that nature, having latches and triggers to accomplish that.

And item 2, "Spacing of Weatherford Spiral Centralizers and Reversible Scratchers throughout the cement fill." Well, I don't use or require any Weatherford spiral centralizers to accomplish this result, but in my apparatus patent is a reversible scratcher, and the amount that the scratcher is used is optional with the operator, whether he wants it throughout the entire cement fill or only in the critical sections opposite the permeable strata. That is an opinion that rests with the operator of how much money he wants to spend and what he thinks his objectives are.

Q. Now, do you advocate placing the scratchers throughout the cement fill, or advocate using them at the [3160] critical sections of the well?

A. Well, that falls within the province of the purchaser and operator, and as a manufacturer it is considered my duty to explain to him the limits to which the device will give him results and what can be done by use of the devices, and if he wishes to buy more, that is his option.

Q. Well, what do you explain, Mr. Wright? Do you explain that it is your belief that they should be used throughout the cement fill or restricted to the critical sections of the well?

A. Well, all that are necessary to accomplish

(Testimony of Kenneth A. Wright.)

the cementation, to effect successful production from the well, is throughout the permeable section wherein the reservoir of the well is positioned, from which to take the production that you require.

Q. Well, do you sell on the basis of that premise or thesis?

A. We usually—we like to sell on the basis of having the operator use no more than the minimum required to effectively get cementation to produce the well without resorting to remedial operations.

Q. Now, isn't that the very converse of what is stated in item 2 of page 4920 of Exhibit AZ, where you advocate that they use the structure throughout the cement fill?

A. That is not a contradiction. That places in the [3161] hands of the operator what he wants to do, and to me there is a complete fallacy in presenting that point as far as "throughout the cement fill," because if we go back to the illustration I used, where there is a 10,000-foot well with a 51½-inch casing in it, and use the 600 sacks of cement and with the expectancy of having the top of the cement located at 1,000 feet above the surface, and if you do get that solid fill, cement fill, for that distance, then it certainly begs the question, How about the 9,000 feet, the remainder of that 51½-inch casing between the shoe of the surface casing and the top of the cement? It has no cement opposite it. So all you do is make complete cement fill in one place and leave it bare in another, so as to carry out the thought expressed here, inferentially, it would be

(Testimony of Kenneth A. Wright.)

to get cement fill from the shoe to the surface on every cementation, and that would bring in a lot of problems that are of a very, very difficult nature.

Q. Well, does one provision like that stated in item 2 on page 4920 of Exhibit AZ result in the selling of more or less equipment than you advocate?

A. It usually results in selling more equipment than what B & W would advocate or recommend, having seen the electric log and knowing the conditions of the particular well and field. [3162]

\* \* \*

Q. (By Mr. L. E. Lyon): You have testified that following the recommendation of section 2 of page 4920 of Exhibit AZ results in the sale of a greater quantity of equipment, that is correct, is it not, Mr. Wright?

A. That is the usual result, yes.

Q. Now, from the standpoint of your experience and actual observations of wells, can you state a particular well and give me an example of what you mean by a greater quantity of equipment?

A. Well, the Kelley well would be an instance of a well of that nature.

Q. All right. Now, following the two procedures, as you advocate them and as advocated by section 2 on page 4920 of Exhibit AZ, what would be the difference in the amount of equipment used, in dollars and cents?

A. That would be impossible to state at this

(Testimony of Kenneth A. Wright.)

time, [3163] without having knowledge or a correct memory of the amount of cement that Mr. Sweetzer selected to use on that particular well, and seeing a caliper survey of the well, it would be impossible to tell how much equipment would have been required to carry out the suggestion of item 2 on that page 920.

Q. Well, besides the Kelley well, haven't you been on actual wells that you have made that comparison on, Mr. Wright?

A. Well, at the present moment I cannot recollect, although in the Rogers report is a good example of scratchers being positioned at the critical points in the particular well and the effective cementation resulted and satisfactory production obtained. [3164]

I think we might have a little further explanation here that would be helpful. Many, many operators—and I mean by operators employees of oil companies—have for many years more or less established, you might say, uniform volumes of cement that they use in cementing or setting casing in particular areas. And at one time I used the figure "600 sacks." The figure 500 sacks for years was more or less a set custom, more or less proceeding on the theory that if a little was good, a lot was better. And so, upon determining how many sacks of cement that an operator was favorable to, that is, his attitude was favorable to using this amount that he had been using for a considerable time, and the employees of the company before him, why, then

(Testimony of Kenneth A. Wright.)

the attitude was taken that: Well, if we are going to use 600 sacks of cement or 500, let us say, then your cement is going to rise so high, and then by plain arithmetic computation, you will need so many scratchers and centralizers. So that more or less makes up the whole story, but it started with the fact that the operator was prejudiced in favor of using some set number of sacks of cement to do the job, and not a particular determination from his electric log. [3165]

\* \* \*

Q. All right. We have gotten through item 2 of this so-called Weatherford formula. Will you take up item 3?

A. Item 3 reads as follows:

“Use of the progressive circulation practice of running casing, developed and refined by Weatherford.”

Well, I understand the “progressive circulation,” that is, I am assuming “progressive circulation” is identical to breaking circulation while running in.

And you note the words “practice of running casing.” Well, I certainly contradict most firmly “developed and refined by Weatherford.” I don’t know the refinements, but we have been breaking circulation while running in with casing, to my positive knowledge from standing on the rig [3167] floor, since 1921.

Q. With the use of scratchers on the casing; that is what you did in the Kelly well, isn’t it?

(Testimony of Kenneth A. Wright.)

A. When you have scratchers with sufficient angular relationship to remove that amount of mud to where the viscosity rises to such a point that you do not get returns while running in, then you have to resort to so-called breaking circulation or, as it is described here or named, progressive circulation. In my understanding they are one and the same.

Q. All right. Now, referring to item 4 of this so-called Weatherford cementing formula, will you continue your explanation with reference to that?

A. Reading item 4:

“Constant moving of the pipe up and down during the cementing operation to assure circulation.”

The constant moving of the pipe up and down during cementing operation is what I have stated in our bulletins, and that is the operation which does the scratching or abrading. So that goes back to the period of Jones and the operation of the wall-cleaning guide and its first sales.

Q. Does or does not that constant reciprocation assure that channeling will not result?

A. The last three words on item 4 state: “to assure circulation.” I am just a little bit puzzled what might be meant there, but the moving of the pipe up and down during [3168] the cementing operation accomplishes two things: Scratching of the surface opposite the scratchers where they are positioned, and the elimination of channeling of cement through the drill mud in the annular space.

Q. As far as you understand the so-called formula of Weatherford as it is set forth in item 4,



(Testimony of Kenneth A. Wright.)

then, it is no different from what you did at the Kelly well, is that correct?

A. That is correct, with the statement that those last three words be stricken.

Q. In item No. 5 of the so-called Weatherford cementing formula will you make the same comparison there?

A. I will read No. 5:

“Constant, planned weight of cement to meet the conditions of the well being cemented.”

The American Petroleum Institute has for a long time made observations, and the cementing companies have collaborated with those, so that the planned weight of cement—and “weight,” as I understand that, means in terms of pounds per cubic foot of slurry. The manufacturers of the cement give you the recommendations for what the weight of slurry, that is, the water-cement ratio, that you should use with each of the cements that they provide. So I can’t see that that does anything except to ask the cement company, after determining what kind of cement you are going to use, what the water-cement ratio would be, and they provided for [3169] you previous to that. So I don’t see where that adds anything to the over-all picture.

Q. Then as I understand your testimony with reference to this Weatherford cementing formula, there is one difference between what you advocate, and that is the difference between the recommendations of scratchers and centralizers throughout the cement fill, as differentiated from the use of scratch-



(Testimony of Kenneth A. Wright.)

ers only at the critical area; is or is that not correct?

A. That is incorrect, because I excluded the spiral centralizers. So, if you will exclude that, then your statement is correct.

Q. What difference does the inclusion or exclusion of the spiral centralizers mean there? Does it mean anything as to the carrying out of the scratching operation?

A. None whatsoever.

Q. You also have before you Exhibit AY. Is there any statement in that catalogue with respect to this so-called Weatherford formula? In that regard I will refer you to page 5019 of that catalogue, and to the item 6 and to the items directly in the column entitled "Functions."

A. On page 5019 of Exhibit AY I find under the paragraph entitled "Functions" in No. 5:

"With Reversible Scratchers and Spiral Centralizers employed throughout the calculated cement fill, and manipulated according to the Weatherford Method, [3170] channeling mud in mud, cement in mud, cement in cement, and by-passed mud and cement back into the cement column is virtually impossible."

Well, that is just saying the same thing as said over here in one of these others, and a little bit more elaborately, but when you get cement fill, those words will just about take care of most of that.

No. 6:

"By employing the progressive circulation technique with these tools, blowouts are eliminated be-

(Testimony of Kenneth A. Wright.)

cause mud of the proper type and weight is re-established in all diameters of the hole in place of gas cut mud.”

\* \* \*

A. Item 6. Reading from this exhibit, page 5019——

The Court: This is part of your explanation, is it?

The Witness: That is correct, your [3171] Honor.

“By employing the progressive circulation technique with these tools, blowouts are eliminated because mud of the proper type and weight is re-established in all diameters of the hole in place of gas cut mud. Only scratchers of the correct spread and type will cut up old gas-laden mud in cavities and other irregularities of the hole and divert new mud into its place to create a fluid block to stop the gas from traveling up the hole.”

Well, addressing myself to the first part of it, the “progressive circulation” is identical as described in Exhibit AZ, and association of blowouts with that particular operation puts a little different attitude or slant on it in this respect: That when you are running casing in the well, assuming you have float shoe or float collar on the bottom, that is, a float collar would be at the top of the first joint or thereabouts, and when you remove too much filter cake from the wall of the well while running in, you will note that you do not get any return circulation each time you lower a joint into the well.

Testimony of Kenneth A. Wright.)

Now, the lowering of a joint of casing into the well is a case of something of positive displacement nature. You should get, if the hole is full, an overflow in volume identical to the volume of the particular joint of casing that you lower. [3172]

Now, if you do not get that, that is one of the signs that experienced men become a little bit uneasy about, and if it continues long enough, why, there is trouble in it. And because, if you do not know where the top of the fluid is in the annulus, that is to say, if you can't see it and it does not actually spill over each time you lower in a joint, you don't know whether it is down a hundred feet or 500 feet, or it might be thousands of feet, and then it is critical.

Q. (By Mr. L. E. Lyon): Why?

A. Because you might expose a sand having either water or gas or oil, with sufficient bottom-hole pressure to blow out in the annular space. So while you run casing, you might end up with a blowout. So, as I want to re-emphasize, when you do not get returns while running in, experienced men know that they had better make a note of it and not let the condition get too exaggerated or very serious trouble might result. So that is more or less an acknowledgment of that particular fact.

That is the way I interpret that, as a person having had some 36 years of experience, associated with the drilling of oil wells. So that is new as far as what is disclosed in the previous Exhibit AZ.

It might be said that since the use of the float

(Testimony of Kenneth A. Wright.)

shoe, float collar in our use, unless it becomes faulty in operation, [3173] the well can't blow out inside the casing; it can only blow out in the annular space.

The remainder of that paragraph refers to—well, that is, you might say, taking some liberties. Strike that.

I mean that is a person's idea of what the scratchers do when you do break circulation and circulate out the mud which has been quiescent for the period which you withdrew the drill pipe, rigged up to run casing and got the casing back in the hole to that particular depth.

Q. Now, Mr. Wright, in the very second paragraph of page 5019 is a statement with respect to alternating the Weatherford scratchers. What does that mean? [3174]

A. Well, the statement just speaks for itself as far as I am concerned. We do not follow that practice and get constant success, so I can't see it adds anything.

Q. You have got two Weatherford scratchers. It talks about mounting them, one clockwise and the other counterclockwise, doesn't it?

A. That is correct.

Q. Does that refer to the direction in which the bristles extend?

A. That is correct.

Q. Does that refer to the direction in which the bristles extend?

A. That is correct.

Q. So you would mount them, in accordance with that one which I have holding here in my hand,

(Testimony of Kenneth A. Wright.)

with the bristles running clockwise, and then the next one would be reversed, with the bristles running counterclockwise, in accordance with that paragraph, wouldn't you?

A. That is my interpretation of this paragraph 2.

Q. Just as I am holding these up?

A. That is correct.

Q. Does your company ever advocate mounting any of your scratchers in reversed relation?

A. No, they have not.

Q. Did you ever know of anybody ever using your [3175] scratchers in such reversed relation?

A. I have never seen them mounted on a casing in that manner, nor has anyone ever told me that they mounted them in that manner.

Q. All right. In your opinion, is anything accomplished by such reversal?

\* \* \*

The Witness: No. In my opinion, nothing is accomplished beneficial to the well whatsoever.

Q. (By Mr. L. E. Lyon): Now, you can explain your answer if you desire to.

A. Well, this criss-cross pattern, if we may call it that, as outlined in this particular catalog, I think, was [3176] innovated by Mr. Hall in about 1947 or thereabouts. That is the first time I have any recollection of having seen it in his advertisements. So that begs the question: What did he do for the other seven years—have failures or what?

(Testimony of Kenneth A. Wright.)

The Court: It could be a slight improvement, could it not, and not be revolutionary, or not indicating past failures?

The Witness: Your Honor, I don't believe there is a single bit to be gained because——

The Court: Does it do any harm, in your opinion?

The Witness: It would not do any harm, but the striations are vertical so they do not make a criss-cross pattern on the path of the well at all. They are all making vertical striations.

The Court: In your opinion, the result would be the same?

The Witness: That is correct.

The Court: If the scratcher wires were all operating in the same direction?

The Witness: That is correct, your Honor.

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, have you concluded [3177] your statements with reference to this second catalog, Exhibit AY, concerning this so-called Weatherford formula?

A. Well, I think I have. But, to the particular part of which might be called the Weatherford formula, still I am a little bit unclear in my mind what are the limitations of it.

Q. You have stated the only differentiation that you can see between what you used in the Kelley well, is that correct?      A. That is correct.

Q. Mr. Wright, you have produced another en-

(Testimony of Kenneth A. Wright.)

enlargement, enlarged photograph of, I believe, Figure 27 of Jones and Berdine Report. I will place before you that enlarged photograph and ask you to state what it is.

I ask that it first be marked Exhibit FW.

The Court: It will be so marked.

Mr. L. E. Lyon: For identification.

(The photograph referred to was marked Defendants' Exhibit FW for identification.)

A. This Exhibit FW is an enlargement of Figure 27 of Exhibit X and represents——

Q. (By Mr. L. E. Lyon): When was this enlargement prepared?

A. I do not recollect how long, but it has been more than a year that we have had—for more than a year and a [3178] half that we have had in our possession enlargement of this particular Figure 27 of Exhibit X.

Q. That enlargement, Exhibit FW, is only a portion of Figure 27 of Exhibit X, is it not?

A. That is correct.

Q. And which portion is it?

A. This—would you mind writing on there what exhibit is this?

Q. FW.

A. ——Exhibit FW enlarges the central section of the Figure 27 of Exhibit X, cutting off the lower portion and the upper portion of that particular photograph so as to bring it——

(Testimony of Kenneth A. Wright.)

Q. There are three cement billets shown in Figure 27 of Exhibit X, are there not?

A. That is correct.

Q. This is an enlargement of a section of which one of those billets?

A. The billet on the left of the picture, that is, the first one counting from the left, and excludes the second and third ones.

Q. And that billet was the billet which was recovered from the well making the test on which form of scratcher, Mr. Wright?

A. This billet is the product of Jones carrying out [3179] the test run, whatever number was given, in which he produced this billet which is photographed here on Exhibit FW and recovered from the operation, and canvas removed so that inspection could be made of the operation performed by the scratcher during cementation.

Q. This enlargement shows what? And by "this enlargement" I mean Exhibit FW.

A. FW is the——

Mr. Scofield: We would stipulate that, your Honor, it shows one portion of that Figure 27 billet.

Mr. L. E. Lyon: That is not the answer which I am seeking. I will accept the stipulation.

Mr. Scofield: Also, the photograph shows what it shows. I don't see why this witness need explain it.

The Court: Proceed. Overruled.

A. Figure 27 is the billet produced by placing scratchers identical to those disclosed or described in Figure 26 of Exhibit X on the casing, the 31½-



(Testimony of Kenneth A. Wright.)

inch casing of the Jones work, placing it inside the steel casing to which the canvas lining in which it had been positioned, carrying out all the operations described in Jones, which are the cementation, together with the reciprocation during the cementation. Thereafter the whole operation was allowed to remain quiescent to permit the cement to set. The simulated well was then laid out on the ground, the steel casing removed, the [3180] canvas permeable section removed, and a photograph taken of what the billet looked like. And it represents the operation of the scratcher wire ends removing the filter cake which had been deposited on the wall, interior wall of this simulated well, which was on the canvas lining. And, as I say, the billet thereafter speaks for itself.

The extremity of the travel of the scratcher is indicated very clearly, because there is a reduced diameter starting with a very determinable point, and that point represents where the filter cake was not removed and results in a reduced diameter of the billet produced by the operation.

Q. (By Mr. L. E. Lyon): All right. Now, Mr. Wright, there are certain long striations shown in Exhibit FW. Have you an explanation of those striations? [3181]

A. My explanation of those striations is that they represent the path of the wire ends when moving up and down against the canvas bag and shifting over at the top and bottom of these screws, so as to

(Testimony of Kenneth A. Wright.)

accomplish that amount of mud cake removal and scratching of the canvas sack.

Q. Now, you have referred to certain striations there. Will you just mark with the word "striation" on this photograph Exhibit FW to which you are referring——

A. Well, it would be impossible to——

Q. Now, just pick out one of them. You can't mark them all. A. Single "striation."

Q. Now, there are other striations shown in this photograph which are of less intensity. Will you mark those "Striation A" or mark the ones of greater intensity "Striation A"? You have marked one of less intensity.

(The witness writes on said photograph.)

Q. Now, on Exhibit FW, you have marked the centermost, what I would consider the deepest striation, as "Striation A" and the striation next to it is marked with just the word "Striation." Have you an explanation for the difference in intensity of those two striations, Mr. Wright?

A. Well, it is conjecture inasmuch as no one can get down in the well or the simulated well and make observations of just when the filter cake was removed, and what I mean by [3182] that is the amount removed by each individual wire end moving up and down against the wall of the canvas; and I would point to the fact that there are many, many more scratches than there are wires on the device, and that is the pertinent point, and we have

(Testimony of Kenneth A. Wright.)

where the same type of operation in every respect that we have in the well bore, a primary filter cake, removal of it simultaneously, with the deposition of a secondary filter cake and reciprocation of the casing, during that period, which is scratching, the face of the simulated well bore followed by reciprocation during the period the cement slurry passed by and there has to be a sweeping out of all of the mud fluid before cement fill is accomplished. So, the end product of it is this billet with this number of striations on it greater than the device itself has, and the observed observation of Mr. Jones is that in his opinion it was complete cement fill or words to that effect.

Q. Now, Mr. Wright, on Exhibit FW, you have a certain number of what appear to be major striations like Striation A, one of greater intensity, have you not?      A. That is correct.

Q. And in between those greater striations or those more intense striations you have some that are not so visible or not so intense, one of which you have marked with just the word "Striation," is that correct?      A. That is correct. [3183]

Q. Now, do you account for greater intensity in some of the striations than in the others and, if so, how?      A. There again——

Q. I am asking for your opinion, Mr. Wright, just state it.      A. My opinion?

Q. Yes.

A. Well, there are so many conjectures. The device may not have rotated—or may have rotated

(Testimony of Kenneth A. Wright.)

past a point and bent the next wire, so that deposition was sufficient during that period to make what results in a cavity.

Q. Well, do or do not this difference in striations give any indication of the fact of rotation of the scratcher?

A. Well, the pertinent point is that there are more striations than there are fingers.

Q. And what does that show?

A. That the device rotated.

Q. And isn't that the purpose for which this enlargement, Exhibit FW, was made, to demonstrate that fact?

A. That is correct. [3184]

\* \* \*

Q. I hand you, Mr. Wright, a detached Multiflex scratcher finger. I believe you described this structure yesterday as attached to a collar. Is this a true sample of the Multiflex scratcher finger?

A. It is.

Q. That illustrates the hairpin wires hooked over the retaining pin on the clip. Will you just point that out? [3189]

A. The pin that I described yesterday is this little tailpiece folded up into an upright position, permitting the loop to pass over and hold it, retaining it from slipping out, and permits a base point from which to do the twisting and torquing and winding up.

Q. The entire spring-winding of the individual wires, that is against that little clip or pin, is it?

(Testimony of Kenneth A. Wright.)

A. That is the base point, the fixed point from which to establish the twisting and torquing of the wire.

Q. And, as this clip is secured to the collar of the scratcher, it is by spot-welding at these four ears at the two ends of the clip; is that correct?

A. That is correct; and exemplified by the fingers mounted on Exhibit 57.

Q. So that the bundle of wires inside of the clip is free to wind up within the clip?

A. They are flexible within that length of that housing.

Mr. L. E. Lyon: I will offer the separated wire, marked as Exhibit FX, in evidence as FX. [3190]

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, I believe that we had gotten to the point of the Kelly well operation. What was the next commercial operations or operation of B & W in the sale and use of scratchers?

A. Well, I do not recall the next sale of scratchers at this particular moment. But shortly—

Q. The next ones that you do recall, were those the sales to the Union Oil Company?

A. Yes, sir.

Q. In the Rosecrans wells?

A. Shortly after the Kelly well we sold some scratchers to the Union Oil Company.

Mr. Scofield: We will stipulate that, your Honor, if they say they are. The Rosecrans records are in evidence in the public use proceeding, Rosecrans wells 38 and 39, the Calendar wells.

(Testimony of Kenneth A. Wright.)

The Court: Are they in evidence here?

Mr. Scofield: Yes, sir.

Mr. L. E. Lyon: Yes, sir. That testimony of this witness and also the records of the Union Oil Company are in evidence as to that sale and that use.

Q. In those wells, the Rosecrans wells 38 and 39, I believe you have a map, Mr. Wright, which shows the [3191] location of Rosecrans 38 and 39 wells with reference to the Kelly well. Will you produce that?

A. I gave it to you, Mr. Lyon, to be marked.

Q. Oh, that is in one of these that was marked. You are correct; it has already been marked.

I place before you Exhibit FL for identification and will ask you if you can tell me what that is.

The Witness: What number did you say, FL?

The Reporter: FL; yes, sir.

A. This Exhibit FL is a map of the Rosecrans oil field, not the entire field, but a part of it located in Los Angeles County in the area of South Main Street.

Q. (By Mr. L. E. Lyon): On this map you have circled the Kelly well and also the Rosecrans wells 38 and 39. Will you just mark, taking a pen, the Kelly well with the words "Kelly well" and the Rosecrans wells with their names, "Union 38" and "Union 39"?

Mr. Scofield: We are willing to stipulate this, your Honor; that is, the map itself shows that the

(Testimony of Kenneth A. Wright.)

plot of land there is the Union Oil Company and below the "Union Oil Co." is "Rosecrans" and above the wells are numbered 38 and 39, and the wells have been circled in the map that was furnished me. So I do not believe there is any necessity.

Mr. L. E. Lyon: The only reason I wanted to mark them is so they will be apparent. Of course, they are circled, [3192] and if you look hard enough you can find "38" and "39" on them.

I will accept the stipulation and I will ask the witness to mark them and I will offer the map in evidence as Exhibit FL.

\* \* \*

Mr. L. E. Lyon: You have circled the Kelly well here. Just put an arrow on it and write out here "Kelly well" and lead to the circle.

You have the 38 and 39 wells. Just put "Union 39" and "Union 38" and put an arrow to the circle. Nobody will have any trouble finding them then.

The Court: Those markings are being made on Exhibit FL?

Mr. L. E. Lyon: That is right, your Honor.

The Witness: I have marked the Exhibit FL in accordance with your instructions.

Q. (By Mr. L. E. Lyon): What scratchers, Mr. Wright, were used by the Union Oil Company in the Rosecrans wells 38 and 39 marked on Exhibits FL Union 38 and 39?

A. Scratchers similar to Exhibit 104, without having been deformed as much as this one has by someone. [3193]

(Testimony of Kenneth A. Wright.)

Q. You have studied the logs of those wells which are in evidence, have you?

A. I have studied the tour reports which are a part of the logs.

Q. You are also familiar with the operations of the Union Oil Company in the use of your scratchers at that time?

A. Well, I assume they followed out instructions that were given to them.

Q. Well, was there any difficulty encountered in using the scratchers in the Rosecrans wells 38 and 39?

A. An examination of the tour reports shows they ran casing to bottom without having to break circulation while running in.

Q. The A.P.I. meeting was held on March 19, 1940. You were there?      A. I was.

Q. And you have also referred to your Bulletin 101, which is in evidence as Exhibit CR, a copy of which I place before you, Mr. Wright.

And may we have the same stipulation, Mr. Scofield, that Bulletin 101 was printed and distributed by B & W prior to the A.P.I. meeting of March 19, 1940?

Mr. Scofield: Yes, I will so stipulate.

Mr. L. E. Lyon: I will accept the stipulation.

Q. You were present at the A.P.I. meeting on March [3194] 19, 1940, given at the Biltmore Hotel, were you?      A. I was.



(Testimony of Kenneth A. Wright.)

Q. That was a regional or sectional meeting of the A.P.I., was it?

A. I think it is sectional, although I am not quite certain. The title page of the paper will clear that up, whichever it is. [3195]

Q. And you were present while Mr. Jones gave his report, were you? A. I was.

Q. You testified that Mr. Jones gave his report from slides, rather than from strictly reading his report, is that correct? A. That is correct.

Q. Do you recall what Mr. Jones said, if anything, about the mounting of the scratchers on the casing, at the time he gave his report?

A. Yes.

Q. What did he say?

A. Mr. Jones stated, and at the time while he was making the statement, used a pointer to point out the stop rings above and below the scratcher, and made the statement that the device was mounted on the casing so as to be free to slide between those vertical stops, and free to rotate on the casing, simultaneously rotate on the casing.

Q. This A.P.I. meeting was an open meeting of the American Petroleum Institute, was it?

A. It was.

Q. And no invitation was required to be there, was it? A. There was not.

Q. It was a public meeting, then?

A. Yes, it was. [3196]

Q. After this A.P.I. meeting did anything happen to your business? Just strike that a minute.

Before the A.P.I. meeting you had sold scratch-

(Testimony of Kenneth A. Wright.)

ers, as the testimony shows, to the Union Oil Company and the Texas Company. Had you sold them to anybody else that you recall?

A. Well, the Kelly well, and I think there was one other. My memory is not quite distinct at this moment.

Q. What happened after that A.P.I. meeting to your business?

A. Our business of selling these scratchers increased monthly and our area of sales increased until, by June of 1940, Mr. Barkis and I concluded that it was safe to extend our business to the Gulf coast area. And so Mr. Barkis went to Houston and opened an office there and started selling these guides to the industry, and from that built up a business selling scratchers to the drilling section of the oil industry.

\* \* \*

Q. (By Mr. L. E. Lyon). At the time of the A.P.I. meeting did you have any discussion with any particular [3197] individual connected with any oil company with respect to Mr. Jones' presentation of the report to the A.P.I. meeting?

A. I talked to—I was with Mr. Barkis when a Mr. Bell, known as Ham Bell, of the Continental Oil Company, approached him and conversed with Mr. Barkis.

Q. And that conversation was had at the A.P.I. meeting?      A. Directly after Mr. Jones' paper.

Q. Were you three the only ones that were in that conversation?

(Testimony of Kenneth A. Wright.)

A. There were only the three of us present.

Q. And Mr. Bell was connected with what company?

A. Continental Oil Company, Los Angeles regional office.

Q. Did Mr. Bell have any comment to make with reference to the report that was given by Mr. Jones? If so, state what it was.

A. Mr. Bell stated that he had received a copy of our Bulletin 101. I don't remember what he said he did with it. But after listening to Mr. Jones: please provide him with another copy at once, because he was so favorably impressed with what had been disclosed in the Jones paper and he intended to carry out the use of the scratchers in the Continental Oil Company operations.

Q. Did the Continental Oil Company start purchasing scratchers from you immediately following the A.P.I. report and your conversation with Mr. Bell? [3198]

A. Shortly thereafter we sold scratchers to the Continental Oil Company.

Q. And continued to sell scratchers to the Continental Oil Company from then on?

A. We have.

Q. I hand you, Mr. Wright, a series of B and W invoices and ask you to refer to these. I don't know that they are in order, but here the first one on the top of the stack is Westmont Oil Company and

(Testimony of Kenneth A. Wright.)

dated April 29, 1940, and it states it was ordered by Mr. Roulston. Are you familiar with that invoice?      A. I am.

Q. Do you know who Mr. Roulston was?

A. No, I don't recall Mr. Roulston but I do remember Mr. Dickey.

Q. Who was Mr. Dickey?

A. He was the superintendent for the Westmont Oil Company in that particular area. He might have been their head tool pusher.

Q. This invoice indicates a sale, starting on April 29, 1940, to the Westmont Oil Company, does it not?      A. That is correct.

Q. Of what?

A. Six wall-cleaning guides for 7-inch A.P.I. casing at \$7.50 each. [3199]

Q. I notice marked on that is "Job #9." Do you know what that refers to? That is in pencil, I believe.

A. My recollection is it might have been the ninth sale of scratchers, although it is approximately correct.

Q. I also hand you one of April 30, 1940, to the St. Anthony Oil Corporation. What is that for?

A. Ten wall-cleaning guides for 7-inch A.P.I. casing at \$7.50 each.

Q. That has on it a notation of a "verbal order" by whom?      A. Mr. Adams.

Q. Do you know Mr. Adams?

A. Yes, I know Mr. Adams.

Q. Who was Mr. Adams?

(Testimony of Kenneth A. Wright.)

A. He was the superintendent in charge of operations there in that area.

Q. Do you recall whether these Mr. Dickey and Mr. Adams that you have referred to were at the A.P.I. meeting?      A. I don't know.

Q. You don't know whether they were or not?

A. No, I don't.

Q. Now, I hand you a further invoice, of May 6, 1940, to Texas Company, ordered by a Mr. Bourgeois. What is that name. It is a French one.

A. Oliver Bourgeois. [3200]

Q. Who was Mr. Bourgeois?

A. It is my recollection that Mr. Bourgeois was the warehouseman or some part of the purchasing department of The Texas Company.

Q. Located where?

A. At their Signal Hill office which did all the purchasing for the Southern California area.

Q. I hand you another invoice, of May 14, 1940, to Convoy Petroleum Co., indicating, does it not, this set of invoices, that you were still using that pad of dime-store invoices originally and then substituted later the printed form which is on top, Mr. Wright?

A. That is what it indicates to me.

Q. This order also states on its face that it was ordered by Jack Rogers. Who was Jack Rogers?

A. Mr. Rogers was either a tool pusher or superintendent for that particular company.

Q. I hand you a further order, of May 2, 1940, addressed to "Union Oil Company, Santa Fe

(Testimony of Kenneth A. Wright.)

Springs," and on the face of this order is in pen "Job #31." Does this refer to job—What does that mean?

A. Well, that indicates to me that we had sold scratchers for use in 31 operations.

Q. By the date of May 2nd?

A. 1940. [3201]

Q. 1940. All right. Here is an invoice to Hilldon Oil Company, of May 14, 1940, and on the face of that is "Job #35," and this indicates that this was an order received by Mr. C. Winslow. Who was C. Winslow, do you know?

A. He was an employee of that company.

Q. I notice that there is a typewritten and penciled delivery slip attached to this invoice. Is that what you were using for delivery tickets at that time, Mr. Wright?

A. That is correct.

Q. This invoice has on its face "Job #35." Does that have the same significance as the other notations on the face of the invoices?

A. That is correct.

Q. The next one of those is a sale to Western Gulf Oil Company on May 14, 1940, having on its face "Job #36" and referring to Mr. C. P. Stanfield. Do you know who he was?

A. I am not quite sure. There was a Mr. Stanfield working for that company at that time, according to my recollection, but I don't personally know him.

Q. On May 24th, the next invoice in this stack has on its face "#39," which I presume is Job No. 39,

(Testimony of Kenneth A. Wright.)

and the sale is to McKeon Corporation; and it says "Delivery to Cal-Mac Exchange #3" on the face of that. Do you know what that refers to?

A. That was the name of the well which McKeon Corporation were drilling. [3202]

Q. I notice, Mr. Wright, that there is some skip in these invoices that I have in front of me between the job numbers. Is this all of these old invoices that you have been able to find to produce?

A. That is correct.

Q. Following through, I note that this job numbering apparently stops with the sale to the Union Oil Company on June 25, 1940, and that that invoice has on it "Job #49." That, I presume, refers to the 49th sale of scratchers, is that correct?

A. That is my recollection.

Q. And it was about that time that you established the Houston office, is that correct?

A. Approximately that time.

Mr. Scofield: What date was that?

The Witness: June 25, 1940.

Q. (By Mr. L. E. Lyon): So that the next invoice I find in this stack is an invoice of sale to the Howard Supply Company on July 25, 1940, and that invoice carries both the Houston and Long Beach addresses, which is not true of "Job #49." No. "Job #49" has both of them on—no, it does not. Neither does this one. A. Neither does this one.

Q. Pardon me. That is Los Angeles and Long Beach.

(Testimony of Kenneth A. Wright.)

A. I don't think any of those—— [3203]

Q. None of those have. These are all Long Beach invoices. So that, prior to March 19, 1940, you had sold probably about five jobs, is that correct?

A. That is approximately correct.

Q. And by June of 1940, you had sold 49 jobs, is that correct?

A. That is what these records indicate.

Q. Did your business continuously increase and expand to other oil companies from then on?

A. It did.

Q. I notice that these early invoices—an invoice here for sale to the Baker Oil Tool, Inc., of July 31, 1940, of one scratcher. Baker Oil Tool is a company which is in competition and selling scratchers now, is that correct?

A. They are selling scratchers now but did not at that time. [3204]

\* \* \*

Q. Was there any job that you know of, and do you have any records showing any sales, prior to the sale to the Kelly well, Mr. Wright?

A. I have no recollection or records of any previous sale.

Q. In fact, you have looked for such prior sales, have you not?      A. That is correct.

Q. And been unable to identify or find any prior records?      A. That is correct. [3205]

\* \* \*

Q. (By Mr. L. E. Lyon): You referred, Mr.



(Testimony of Kenneth A. Wright.)

Wright, to a sale to one other oil company prior to the A.P.I. meeting on March 19, 1940. I think that the invoice for that sale was among the invoices which were handed to me and that invoice is directed to the Pongratz Oil Company. Do you identify that, a sale as of February 17, 1940?

A. I can identify this sale as a sale to Mr. Gus Pongratz.

Q. Was that the other sale which was made prior to the A.P.I. meeting to which you had reference?

A. That is the one I had in mind when I made the response.

Mr. L. E. Lyon: Just couple this invoice with those that are in that Exhibit FY for identification so that it is available under that marking for identification.

The Court: Very well, so ordered.

Q. (By Mr. L. E. Lyon): Mr. Wright, you have referred in your testimony to this matter of progressive circulation [3206] in the operation of the use of scratchers. I believe you have called my attention to the fact that this matter is discussed, also the matter of operation, in the Stormont article, and you desired to point out from that article what you have reference to. That Stormont article is in evidence.

\* \* \*

Mr. L. E. Lyon: Either 65 or 66. The reprint is 65. Here it is, Exhibit 65. The Stormont article is a part of the Exhibit 65.

(Testimony of Kenneth A. Wright.)

Q. Will you point out what you desired from that article, Mr. Wright?

A. On page—I find the pages are not numbered, so I will have to refer to it as the page in which is an illustration of cementing operation up in the upper left-hand corner, in the upper right-hand corner is a photograph of a number of men, one of whom is Mr. J. E. Hall, Sr. And on the third column, second paragraph, it reads:

“While casing is being run in the hole, ‘progressive circulation’ is employed; that is, after [3207] each 800 ft. of casing is added to the string, running operations are halted while drilling mud is circulated. These halts to circulate, and at the same time reciprocate the casing, aid the operation by:”

Mr. Scofield: “Casing string.”

A. “Casing string,” that is correct, by the following things; and that has reference to the breaking circulation while running in that I mentioned in my testimony yesterday.

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, you have produced certain oil field maps heretofore marked as Exhibits FM and FN for identification. I place these maps before you and ask you to explain them. First, I will ask you if these are produced by you as being typical of illustrations of oil field geological formations?

A. Well, this is typical of what we find in most of the oil fields of the world of these types.

Q. All right. Now, will you explain what these exhibits show and what you mean by “of this type”?

(Testimony of Kenneth A. Wright.)

A. Well, Exhibit FN, which is photostated from the bulletin handed out at the American Association of Petroleum Geologists meeting held in Houston, Texas, on March 31, through April 5, 1941, under the sponsorship of the Houston Geological Society, and in a booklet which was obtained, called "Guide for Field Trips," we find a plan view of the [3208] Hastings Oil Field in Brazoria County, Texas, the plan view giving the configurations of the contours and the various fault blocks with the surface trace indicated of the faults, with the up and down sides indicated. And the cross-section, which is the other part of that particular print, illustrates in cross-section what we encounter and the number of faults in the average drilling of a well in faults of that character. And below that is a short resume of the history of the field, when it was discovered and by what particular discovery methods used, and the company and date, and things pertinent to the actual discovery and earlier production of the field itself.

And it illustrates the point that I was making yesterday, that drilling of wells in fields of this nature you actually pass through numerous faults and it is very pertinent to the problem to confine the cement slurry to the annular space that you drill, that is, the annular space between the casing and the wall of the well, and not let it get free to run laterally through the various fault planes, and this is a number of major faults discovered at the time, which is 1941, in this particular field.

And this second one is a similar—

(Testimony of Kenneth A. Wright.)

The Court: What number?

The Witness: FM. Pardon me.

A. —is a plan view of the Conroe oil field in [3209] Montgomery County, Texas, showing the identical type of thing and the amount of faults intersected on a particular cross-section.

There, again, it illustrates the point I was bringing into clarity, that is, of not having erratic fill in the annular space which would indicate that cement slurry had gotten away from you and gone into unknown parts of the field.

Mr. L. E. Lyon: I will offer these two maps heretofore marked FN and FM for identification in evidence as Exhibits FM and FN.

\* \* \*

Q. (By Mr. L. E. Lyon): Mr. Wright, referring to the scratchers in question and referring to scratchers like Exhibit IIII, would you state that the scratcher fingers or wires are flexibly attached to the supporting collar? A. They are. [3210]

Q. Is that also true of the scratchers like Exhibits 104, CK, and 57 before you?

A. They have that feature in common. All of the wire fingers are flexibly attached to the collar.

Q. Now, just explain how they are flexibly attached. [3211]

\* \* \*

A. Referring to Exhibit IIII, the wire fingers starting with the clip which holds the one end in position—and I mean by that the end other than the

(Testimony of Kenneth A. Wright.)

end which does the abrading—it is held in position by a portion of it passing through a hole in the clip and then it passes along the outer periphery of the collar or sleeve, through slots in these bridges, and the slots are only guides for holding it in a nominal position, let us say. It does not restrict it from torquing or turning when a torque is applied at one end or either end. And after passing beneath the tenth clip it has a curved section, and then this arrangement that I have just described permits flexing of the outer wire end and torquing the section beneath the clips without in any manner confining it to this torque. So it is flexible in that manner.

Q. (By Mr. L. E. Lyon): Is there any difference in that respect in the flexible mounting of the other exhibits that you have pointed out?

A. I would further add that the finger itself is made [3212] out of spring steel wire and of a dimension which permits certain amount of flexing when applied to the wall of the well bore.

And in furtherance of your question, all of these devices have that common feature, including the Multiflex which is the Exhibit 57, and the torque section in that particular case is held beneath a clip which is not identical to the clip in Exhibit IIII but the same mechanical application or principle is there, and, as the fingers' outer ends are moved about, why, the flexible mounting permits this flexing in the mechanical structure of the device.

Q. Is there any difference in the flexible mount-

(Testimony of Kenneth A. Wright.)

ing of the scratcher found in the Nu-Coil scratcher as illustrated by Exhibit 72, Mr. Wright?

A. The same basic principle of torquing the section of the wire just adjacent the sleeve itself.

Q. And a flexible mounting here, and the torque is imparted by the coil spring in this structure of Exhibit 72, is it? A. That is correct.

Q. Does it function in any way different from the torque mounting of Exhibit IIII or 104, Mr. Wright? A. None whatsoever.

Q. Is it true to say that all of these mountings and scratcher fingers depend upon a spring attachment to the [3213] collar?

A. That is a general term that could be applied to all of them.

The Court: By "all of them" you are referring to?

The Witness: Pardon. Referring to Exhibit 72, Exhibit 57, Exhibits 104, IIII, and CK.

The Court: Are those all B & W scratchers?

The Witness: Yes, your Honor.

Q. (By Mr. L. E. Lyon): Mr. Wright, in the year 1940, sometime after the A.P.I. meetings, you applied for a second patent; is that true?

A. That is correct.

Q. And that patent is the so-called apparatus patent 2,374,317, the application for which was filed December 10, 1940, and which is here Exhibit 38. I will place a copy of this patent before you, and following the same procedure as you did before, will

(Testimony of Kenneth A. Wright.)

you just briefly and broadly define the invention you made of this patent? In the first instance——

\* \* \*

A. This patent No. 2,374,317 was applied for by myself through a Mr. James M. Abbett, patent solicitor here in the City of Los Angeles, and carries out my thoughts in [3214] providing a device which could carry out the operation of the method patent which was then on application. I had in mind the necessity for a device which could be affixed to the casing, a device which would be made cheaply and provide this most fundamental element of a wire logger to abrade the wall of the well bore, have it of construction which would be durable enough to last for the period required for the operation.

I might point out, in case it has not been observed, these devices are cemented in the well on the casing and, to that extent, they are 100 per cent consumption articles in most instances; so they are to that extent one-trip tools, you might say, although in the plugging operation they are recovered, but that is a very small portion of their usage.

The device had to be of a construction which would permit the casing to be lowered into the well without hazarding that operation, and permit of the fluid to pass through the fingers and not retard the downward surge of the fluid when lowering the joint-by-joint casing string into the well. And so, with all those thoughts in mind, this particular apparatus which is like Exhibits IIII and CK and 104 was



(Testimony of Kenneth A. Wright.)

developed and subsequently presented to Mr. Abbett and told to prepare a patent application and forward it to Washington for filing.

Q. Before that application was filed did you supply Mr. Abbett with a copy of the Jones and Berdine report? [3215]

A. During the period that the method patent was being processed, or whatever the proper word is for what happens in the Patent Office, I provided Mr. Abbett with a copy of the Jones and Berdine report, that is, one of the actual mimeographed copies that I obtained that day when the report was given. And he made mention of it in one of his responses to a Patent Office action and I find it is in the file wrapper of the patent making mention of the fact that he is forwarding it to the Patent Office.

Subsequently, when this apparatus patent was applied for he had that before him and he had a Bulletin 101 and a device similar to Exhibit 104 when the application was actually prepared.

Q. Mr. Wright, it has been pointed out that this patent No. '317 in no place shows the mounting of the scratcher or defines that the scratcher is rotatable upon the casing. Did you receive any advice from Mr. Abbott with respect to that matter before the application was filed? A. I did.

Q. And what was that advice?

A. He stated that that particular feature was not patentable; that to mount things rotatably on casings or shafts was very old in the art, and said it was not necessary.



Testimony of Kenneth A. Wright.)

Q. And that was before the application for this patent, Exhibit 38, was filed in the Patent [3216] Office?

A. That is correct.

Q. The patent, Exhibit 38, pictorially shows what scratcher, Mr. Wright?

A. It shows a scratcher similar to Exhibit CK.

Q. In that respect are you differentiating between Exhibits CK and 104, Mr. Wright?

A. Well, there is no difference in the Exhibits 104 and CK, except for date of manufacture, although I don't know when this Exhibit 104 was manufactured.

Q. You subsequently applied for a third patent, Mr. Wright, and that is the patent which is in evidence as Plaintiff's Exhibit 39. I will hand you a copy of that patent and ask you to give me a thumb-nail sketch of the invention of this patent.

\* \* \*

A. It is patent No. 2,392,352, was applied for by me through the same Mr. James M. Abbett, filed August 5, [3217] 1941. I recognized that there was the same identical problem in the making clean contact or bond between the cement that you place in the well as a slurry and having it obtain the bond with the formation itself.

So having that objective, why, I applied for this patent, which was subsequently issued, because there is basically the same problem of removing the filter cake opposite the permeable section of the well bore to obtain a clean bond and seal at that particular point fluids from moving upward and downward, as

(Testimony of Kenneth A. Wright.)

well as to provide a bridge or plug from which other operations, such as whipstocking and things of that nature, might be carried out.

Q. This patent is referred to as a plugging patent, I believe. What does that mean, Mr. Wright?

A. In the open bore hole of a well we pump in cement slurry to be positioned in a solid vertical section, and if it starts from the bottom of the well, we ordinarily call it a plug; if it starts from a point above the bottom and extends upward, we ordinarily call it a bridge. But I believe they are identical, which is oil man's language.

Q. What is the plugging or bridging operation carried out for?

A. Well, if you had, for instance, drilled too deep in a well and encountered a water strata and wished to isolate that from the section above which you deemed to be [3218] productive, before setting the liner in the well you would pump in this cement plug so as to position it through the vertical section of the permeable strata, or extend the plug shortly up into the shale above. And then you would be safe to set the liner in the well and be assured of not having the water from that particular strata commingle with the water or gas from your well.

Another operation, if you wish to whipstock—whipstocking means placing a device in the bore hole so as to deflect the drill—and you must place the whipstock on something solid. Then if you do

[Testimony of Kenneth A. Wright.)

not place it on the bottom of the hole, you must place it on something solid or else the drill, when you are trying to deflect the well over to the new course, will actually follow down alongside the whipstock because, without the use of these scratchers in putting the plug into the well, the cement would simulate, you might say, just a little core of cement in the well, with a heavy ring of filter cake around it. So your whipstocking operations, you may make four or five attempts before you get off the plug, as we call it, get off the whipstock.

Q. In your method patent of Exhibit 37, that is the '372 patent, I believe the method contemplates the cementing of the scratcher in the well, does it not? [3219]

\* \* \*

A. That is correct, together with the casing.

Q. (By Mr. L. E. Lyon): Now, is that true of this Exhibit 39 patent?

A. No, that is distinctly different.

Q. And in that respect—what is that difference?

A. That in the plugging operation you would draw the scratcher and scratchers—it would be singular or plural—together with whatever they are mounted upon, up out of the plug or bridge, leaving the cement in place without having any tube or scratcher in it.

The Court: How can that be done—wait until the cement sets and then draw it up?

The Witness: No, your Honor. The cement is a slurry of fluids when you pump it in, and we ob-

(Testimony of Kenneth A. Wright.)

tain what we call a balanced conditioned by—I can illustrate it this way: [3220]

If you are going to position a plug in a well bore from, say 5,000 feet up to 5,050 feet, that was the plug you wished to set or make in the well, you would take a drill pipe or tubing and mount scratchers on it for a distance of 50 feet and lower it into the well to where that bottom of the drill pipe or tubing that had the scratchers mounted upon was at 5,000 feet. Then you would establish circulation. You would then mix a volume of cement slurry which would be equal to the total volume of the space of the hole from 5,000 feet up to 5,050; and, of course, the diameter would be the one part of your calculation and the height would be the other. And you determine, let us say, for instance, it required 50 cubic feet of slurry. Then the 50 cubic feet of slurry would be mixed at the surface, pumped into the drill pipe or tubing, and it would go downward to the drill pipe or tubing to the lowermost end which was positioned at 5,000 feet, and then turn and start upward in the annular space. And during that period prior to the cement slurry actually arriving at that point, you would either reciprocate the casing so as to provide the scratching action, or rotate, depending on the type of scratcher you had mounted on it.

In pumping it down, the amount of mud fluid which you would use to, you might say, pump it into place, simulates a pipeline where they slug

(Testimony of Kenneth A. Wright.)

through certain quantities of [3221] certain grades——

The Court: Force it?

The Witness: Well, say the cement slurry does not occupy the entire space of the drill pipe or tubing from the 5,000-foot level surface, it makes up that 50 cubic feet. It goes into the drill pipe and goes downward as I have described it.

The Court: It goes down first?

The Witness: That is correct. But mud fluid behind it used to pump it into place, to force it into place, is then carefully metered, that is, volumetrically, and you would then pump in that mud an amount of mud fluid, the volume computed as the result of knowing the volume per foot of the drill pipe or tubing times 4,950 feet.

The Court: Enough to force out the 50 feet?

The Witness: All but the 50 feet. Leave 50 feet inside of the tubing, and then you would have a balanced condition on the inside. Then you have equilibrium conditions by the hydrostatic head inside the tubing and outside of your annular space.

The Court: Presumably the cement slurry has gone out of the tubing then?

The Witness: Pardon me, your Honor. Not quite yet. As soon as that balanced condition is arrived at and the man at the cement truck knows it because he has metered the [3222] fluid very carefully, shuts the pump off. That means he won't pump any more fluid in. At that moment the driller pulls the drill pipe or tubing with the scratcher up out of

(Testimony of Kenneth A. Wright.)

that cement slurry, so the bottom end of his assembly then is above the 4,950-foot mark. So he has left in the well this column of the cement slurry, without any mechanical apparatus in it. So we have got cement 100 per cent in cross-section of any vertical section.

The Court: That would be true when you plugged the bottom of the hole?

The Witness: That is correct.

The Court: If you made a bridge, you could not recover it?

The Witness: You would follow the identical procedure, your Honor, and just start it wherever you wish. If the well is 5,000 feet in depth and you wish to place a bridge in the well, starting from 4,000 feet up to 3,950, you would follow out the identical operation in every respect.

Q. (By Mr. L. E. Lyon): You balance your columns of fluid with mud on the opposite side of the cement, that is all? A. That is correct.

Q. So you can stop the plug at any point in the hole you want by that balance?

A. That is right, because the minute you stop the pump it will come into equilibrium condition because of its [3223] specific gravity; and if you get too unbalanced, you commingle mud with cement slurry.

Q. And you form a solid plug across the hole in that operation, as distinguished from an annular ring in the first patent? A. That is correct.

(Testimony of Kenneth A. Wright.)

Q. That solid plug is called either a bridge or a plug, depending upon its position in the well?

A. That is my nomenclature, and I think that prevails for the most part of the industry.

The Court: In the case of the bridge, the cement slurry would be a column of mud starting out, wouldn't it?

The Witness: That is correct. There would be mud fluid from the 4,000-foot level down to the bottom of the well. When we start the operation, the hole is assumed to be full of fluid at the top.

The Court: Is there any danger of that cement plug or bridge sinking, then?

The Witness: No, your Honor. That does not happen. The viscosities of the two fluids are sufficiently close to each other to maintain an equilibrium condition there and the cement won't actually settle down into the mud.

The Court: It will remain ultimately set there?

The Witness: It will remain there, but if you establish a tube through it and get it in condition where you get the [3224] hydrostatic or hydraulic forces, then it will move. Under those conditions it will remain there and set in place.

The Court: And the specific gravity of this mud fluid is predetermined in some way with reference to the slurry?

The Witness: No. You would use your ordinary drilling fluid, which, for the most part, will weigh between 72 and 80 pounds per cubic foot; that is,



(Testimony of Kenneth A. Wright.)

most drilling operations are carried out within that range with water base cuts.

The Court: And what of the cement slurry?

The Witness: It will weigh 117 to as high as 125 pounds per cubic foot, just about almost twice the weight of the ordinary drilling fluid.

The Court: How do you compensate for that mixing when you make the bridge?

The Witness: Mixing, or do you mean after you pulled up out of it it would fall?

The Court: Yes. How do you keep the cement slurry from falling down into the mud?

The Witness: I say, the viscosity of the two fluids are sufficiently the same, even though the weights are different that you don't get the thing—it will remain there, and you do not get the condition of the weight of one in contrast to the weight of the other through a tube.

The Court: The disparity of the viscosity is enough?

The Witness: That is principally it, yes. [3225]

The Court: Irrespective of the weight?

The Witness: And the fluid exerts the load similar to a piston one upon the other. My fingers like that, you might say, and the viscosity is an aid in establishing that general picture. [3226]

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, you are familiar with the organization known as Scratchers, Incorporated? A. I am.

Q. Scratchers, Incorporated is or was a corporation, was it not?



(Testimony of Kenneth A. Wright.)

A. I believe it still is as of this particular moment.

Q. Who are the stockholders of Scratchers, Incorporated?

A. Myself, Mr. Barkis and I believe one of his sons residing in Texas, somewhere near Liberty, Texas; another gentleman in Houston, Texas, that I for the moment can't remember but I will ask him and obtain it; Mr. Barrick of Pasadena, California, and Mr. Donald R. Wright, my brother, attorney in Pasadena.

Q. Scratchers, Incorporated acquired by purchase a patent which I will identify as a Black and Stroebl patent, is that correct?

A. That is correct.

Q. And Scratchers, Incorporated filed certain suits, the complaints or files of which are in evidence.

Now, does Scratchers, Incorporated still own the Black and Stroebl patent which is Exhibit 172, a copy of which I place before you, as far as you know, Mr. Wright?

A. As far as I know, it does.

Q. Now, state whether or not those actions, as shown [3227] by Exhibits 143, 144, and 145, the files of which I place before you, were instituted by Scratchers, Incorporated, to your knowledge, on advice of counsel.

A. Exhibit 143 was, I am certain.  
Exhibit No. 144 was.

And may I refer again to Exhibit 143? Yes, Ex-

(Testimony of Kenneth A. Wright.)

hibit 143 was and 144 was and 145 was, according to my inspection here.

Q. Now, these suits were all subsequently dismissed by stipulation. Do you know any reason why it was stipulated that the suits be dismissed, Mr. Wright? A. Yes, I do.

Q. What was that reason? ..

A. On advice of you. You said that it is just beyond comprehension to have that much litigation in operation and you advised me to discontinue this litigation as promptly as you, in your method, would obtain it or could obtain it.

Q. Now, at that time, when I gave you that advice and these suits were still pending, not only these three suits as shown by Exhibits 144, 145, and 143 were pending, but there was this suit pending, was there not? A. That is correct.

Mr. Scofield: We will stipulate that, your Honor.

Q. (By Mr. L. E. Lyon): There was a suit brought in Texas against B and W by Weatherford Oil Tool Company involving the scratcher situation and filed in Houston, was [3228] there not?

A. That is correct.

Q. There were suits filed in Louisiana, Houston, Pecos, and one other point I believe, undisposed of, involving the centralizer situation, wasn't it?

Mr. Scofield: At Corpus Christi.

Mr. L. E. Lyon: At Corpus Christi. That is all stipulated to, is it not?

Mr. Scofield: Yes, it is stipulated, and it may

(Testimony of Kenneth A. Wright.)

also be stipulated that the firm of Lyon & Lyon brought those suits.

Mr. L. E. Lyon: That shows on the face of the Exhibits 143, 144, and 145. It is so stipulated.

The Witness: There is no answer required, then, is there?

Mr. L. E. Lyon: No. It is stipulated.

Q. So that there were then pending some 11 or 12 suits, were there not, when I advised you that the number would have to be cut down?

A. That is correct.

Q. And I expressed to you my opinion that it was impossible for any lawyer or any client to successfully prosecute that number of suits at one time, didn't I?

A. That is my recollection of what you stated.

Q. And that is the only reason that you know of, or the only reason that was ever expressed to you, as to why the three Scratchers, Incorporated suits, Exhibits 143, 144, [3229] and 145, were discontinued?

A. That is correct.

Q. And at that time it was also possible for me, was it not, to get a stipulation dismissing the Scratchers suit in Houston, so that the number of suits was cut down by four, isn't that correct?

Do you so stipulate, Mr. Scofield?

Mr. Scofield: Well, I will stipulate that the Houston suit was dismissed.

Mr. L. E. Lyon: At the same time.

Mr. Scofield: About the same time.

(Testimony of Kenneth A. Wright.)

Mr. L. E. Lyon: And by the same stipulation, without prejudice to the parties.

Mr. Scofield: No, not the same stipulation. There were stipulations in each case.

Mr. L. E. Lyon: Yes.

The Court: I don't quite follow you. Where do the four come in?

Mr. L. E. Lyon: The three Scratchers suits and the original suit, I mean the three Scratchers, Incorporated suits and the original suit, which is Civil Action, I believe, No. 5168 in Houston. It was dismissed at that same time.

Mr. Scofield: Then we filed the Houston suit, your Honor. [3230]

Mr. L. E. Lyon: A couple of years later.

The Court: Well, there was a scratcher suit in Houston, Exhibit 145.

Mr. Scofield: Yes, sir. That is [3231] Exhibit 145.

\* \* \*

Q. I place before you, Mr. Wright, Exhibit AI, and this letter establishes, does it not, the date when you were advised by the Patent Office that the Hall applications, Serial Nos. 388,891 and 528,183, had been abandoned and were no longer pending before the Patent Office? The exhibits 1 and 2 are those applications. [3233]

A. I do not quite understand you, Mr. Lyon. Just a moment and I will read that.

Q. Well, that is a letter from the clerk of the Patent Office, and that is the date when you first

(Testimony of Kenneth A. Wright.)

knew that the Hall applications, Serial No. 388,891, Exhibit 1, and Serial No. 528,183, Exhibit 2, had been abandoned and were no longer pending before the Patent Office?

Mr. Scofield: Mr. Lyon, why don't you make a complete statement of it and tell how the letter was received, that is, the inquiry that was made by Mr. Wright——

Mr. L. E. Lyon: There wasn't any inquiry made by Mr. Wright.

Mr. Scofield: Well, he sent on an assignment, I believe.

Mr. L. E. Lyon: Well, this letter which you received was received by Mr. Hails in response to forwarding of the assignment for recordation, by which you attempted to assign these two applications from you to B and W, did you not?

The Witness: That is correct.

Q. (By Mr. L. E. Lyon): And this letter advised you that these two applications had been abandoned, did it not? A. That is correct.

Q. And therefore the date of May 17, 1946, the date of this letter, establishes that it was after that date and the date when this letter was received, Exhibit AI, that you knew of the abandonment? That is all I am trying to get at. [3234]

A. That is correct.

Mr. Scofield: We will stipulate it.

Mr. L. E. Lyon: Thank you. I will accept the stipulation.

Q. All right. Now, after this notice of abandon-

(Testimony of Kenneth A. Wright.)

ment that you received, you later learned, at a conference had with Mr. Scofield in the California Club, that an application, Serial No. 627,013, had been filed, did you not?      A. That is correct.

Q. And that a copy of that application as filed was given to you and examined by you and Mr. Maxwell, was it not?

A. I am not exactly certain of what was given to me, and the reason I say that, I am not familiar, completely familiar, with all the Patent Office procedures and documents. I did, I know, get a copy of drawings and claims. I distinctly remember that there were those two things. Beyond that I am uncertain because I don't think I recognized quite what they were.

Q. Subsequent to that time, in fact in June of 1947, you offered to the Gulf Research and Development Company for their consideration scratchers like Exhibit 88, did you not?

A. What date did you say?

Q. It was June or July of 1947, was it not? I said it was subsequent to both of these dates, of the California Club meeting and the receipt by you of the letter, Exhibit [3235] AI.

A. That is correct.

Q. Now, when was it, if it wasn't in——

A. My recollection is that I sent——

Mr. Scofield: There is a letter in evidence, your Honor, which is an exhibit here, as of the time that he sent that on, and I am willing to stipulate that.

The Court: What exhibit number?

(Testimony of Kenneth A. Wright.)

Mr. L. E. Lyon: What is the exhibit number?

The Witness: The letter is dated June 30, 1947, as I recollect it. [3236]

\* \* \*

Mr. L. E. Lyon: As there has been one apparently offered in evidence and lost, will you read that and see if we can stipulate that it is a copy of the one that has been lost, so that it can take the place of the lost one? To me that is a copy of the same letter.

Mr. Scofield: Yes, that is the one.

Mr. L. E. Lyon: All right, let us have this marked as Exhibit 64 so we can get it stipulated that is Exhibit 64. [3237]

(Said document was marked as Plaintiff's Exhibit No. 64.)

The Court: According to Exhibit 86(1) for identification, the plaintiff's exhibit list, Exhibit 64 is a letter of June 30, 1947, from Wright to Wescott of Gulf Research and Development Company. Is that the letter?

Mr. L. E. Lyon: That is the letter.

The Court: Is that the letter now being marked Exhibit 64?

Mr. L. E. Lyon: Yes, sir.

The Court: Pursuant to stipulation.

Mr. L. E. Lyon: Yes. [3238]

\* \* \*

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, you forwarded, according to Exhibit 64, two of these scratchers, Exhibit 88, to the Gulf Research

(Testimony of Kenneth A. Wright.)

and Development Company under date of June 30, 1947. Prior to your sending of these two scratchers like Exhibit 88 to Gulf Research and Development Company, had you been advised by anyone, by any counsel, as to your right to manufacture and sell and offer for sale scratchers like Exhibit 88?

A. I had.

Q. By whom?

A. By Mr. William Maxwell, who was then my patent counsel, at that time.

Q. Will you state just what his advise was to you at that time, and let it be shown right here in the record that it has been stipulated that Mr. Maxwell is now deceased, and I believe that is already stipulated on the record——

Is it not, Mr. Scofield?

Mr. Scofield: Yes, Maxwell is dead.

A. Mr. Maxwell stated, after reading the claims and other material which Mr. Scofield had provided, that, [3239] relating to this Application No. 627,013, the stud mounting, to which he had addressed claims in that particular application, had been on sale and in public use for four years or more, which was easily seen by examination of his advertisements, the angle that the wire projected from the sleeve was required to be an exact tangent, in precise mechanical precision, and, in addition to that, Mr. Maxwell stated he was, in his opinion, quite doubtful as to what part might be termed “continuation in part” and referred to the text of



(Testimony of Kenneth A. Wright.)

the patent as calling for this so-called "unusual arrangement." So it was his advice that the device similar to what is shown here as Exhibit 88 could be made by anyone in the trade and be free and clear of any claims which Mr. Hall might obtain in the Application No. 627,013.

Q. (By Mr. L. E. Lyon): Now, was it upon that advice that you proceeded to offer these structures of Exhibit 88 to the Gulf Research and Development Company for consideration?

A. That is correct.

Q. And these two devices were sent to the Gulf Research and Development Company as shown, and were they subsequently returned to you?

A. Well, I think your question might have included this device, Exhibit 88, and this was for 7-inch casing, and the letter states they were scratchers for 5½-inch casing, [3240] so——

Q. Well, were those 5½-inch scratchers sent with that letter—sent as referred to by that letter of June 30, 1947, Exhibit 64, subsequently returned to you?

A. They were returned to me in the year 1948, upon my request.

Q. And that is shown by Exhibit YY, your letter written to Mr. Wescott requesting that they be returned, is it not?

A. I don't know the exhibit number, but I did request it the following year and they were returned to me, and my examination showed that they

(Testimony of Kenneth A. Wright.)

had, as far as I was able to determine, never been tested in any manner whatsoever.

Q. That is, the two scratchers like Exhibit 88, except for size, were returned to you and showed no evidence of having been used or tested or anything else? A. That is correct.

Q. Did you have a conversation with the Gulf Research and Development Company or the patent department for the Gulf companies with respect to these exhibits, these two scratchers like Exhibit 88?

A. I did.

Q. When?

A. On September 8th and 9th of 1947.

Q. You had more than one conference then, on two days? [3241] A. That is correct.

Q. Where did they take place?

A. In Pittsburgh, Pennsylvania, in the Gulf Oil Corporation's building in that city, in the law library.

Q. All right. Now, who was present?

A. Mr. Harold Decker, attorney, of Los Angeles, California, myself, Mr. A. M. Houghton of the Gulf Research and Development Corporation, Mr. L. W. Vollmer of Gulf Research, and Mr. B. B. Wescott of Gulf Research, and, additionally, there was a young man that I don't recall his name, who was an assistant to Mr. Houghton, who was probably present 20 per cent of the time or maybe less.

Q. Littlehales?

A. No. It was not Mr. Littlehales. Mr. Little-

(Testimony of Kenneth A. Wright.)

hales was in Washington and this gentleman stayed in Pittsburgh.

Q. All right. Now, will you state what conference was had with reference to the scratcher like Exhibit 88, at that time and place, and do I understand from your statement that the conference continued over two days at the same place and all the same parties were present at both times?

A. The conference lasted for parts of two days and took place in the same room of the same building, but Mr. Wescott left either the afternoon of the first day or shortly after the next morning, so he was not in attendance for the entire [3242] period.

Q. Otherwise, the same parties were present at all times?

A. But Mr. Vollmer and Mr. Houghton were present as well as myself and Mr. Decker, for that entire period.

Mr. L. E. Lyon: May it be stipulated that Mr. Houghton was the patent lawyer in charge of the patent department for the Gulf Research and Development Company?

Mr. Scofield: Yes, it will be so stipulated.

\* \* \*

Q. (By Mr. L. E. Lyon): Now, will you give the conversation that was had over that two-day conference by the parties present with respect to the scratchers like Exhibit 88, Mr. Wright?

A. On the afternoon of the first day—and my recollection is that it was a Monday—I asked Mr. Houghton if he had decided to give his approval for

(Testimony of Kenneth A. Wright.)

the Gulf Oil Corporation [3243] to purchase devices similar to Exhibit 88, and he replied, and I am giving the substance of his conversation as I recall it, that he had not as of that time but was seriously considering it, and wanted Mr. Decker and myself to state our position with respect to our rights or position in offering it to the Gulf corporations.

It is my recollection that I repeated Mr. Maxwell's advice about the claims which Mr. Hall could obtain and those which had gone into the public domain, and covered all of Mr. Maxwell's statements as best I could, and pointed out to him the advertisements of Mr. Hall, which dated back to 1941, which apparently Mr. Houghton at that time had not reconciled with the application because he did have in his possession at that time what appeared to me to be a complete history of Mr. Hall's applications. In fact, he said he did have power of inspection and had a file which he said referred to them.

So, upon hearing my position, he said the Gulf in their operations had a very firm policy of wanting more than one supplier for any piece of equipment or apparatus which the company used, they were very anxious of always having a competitive condition, that is, having the suppliers in a competitive position, so that they could obtain best quantities and best qualities and best prices.

So he immediately asked me how many could I make and [3244] for what price would I make them

(Testimony of Kenneth A. Wright.)

and what quantities could I deliver over a certain period of time.

I do not recall the figures I gave him as to quantities. I did give him some estimate as to dates and I quoted him prices which would be the same as Mr. Hall was offering them at the time, which was almost the same as I recall that our wall-cleaning guides were offered in the market.

So, the conference closed on Monday with that, I might say, position to be rediscussed in the morning, that is, the following morning, which would be Tuesday.

We convened again on Tuesday morning at about 9:30 or 10:00 o'clock in that same room, and Mr. Houghton asked me to repeat the counsel which Mr. Maxwell had given me, which I did, and questioning went on for some length, and discussions of that nature.

So, after perhaps a half-hour of exchanges in that respect, Mr. Houghton said, well, since we had closed the evening before he had contacted Mr. Thomas E. Scofield and he had stated that Mr. Wright and his attorney Decker were in Pittsburgh and were offering the scratchers similar to the two that he had, that were previously sent as shown by this letter of June 30, 1947, and said he had given Mr. Scofield what our position was in relation to his—what might be the substance of his Application No. 627,013, and he said Mr. Scofield had stated to him that he was going to—— [3245]

(Testimony of Kenneth A. Wright.)

Mr. Scofield: Now, this is hearsay, your Honor. I object to anything that I said to him.

The Court: It will be received as part of the conversation, not for the truth of what was said, as to the verbal act.

Mr. L. E. Lyon: Your Honor, as to what Mr. Scofield testified to is stipulated in Mr. Houghton's deposition, that he took exactly what he said. He asked Mr. Houghton, "Did I call you and state that?" Mr. Houghton said, "Yes."

"And if you say I did, I did."

Mr. Scofield: It was not in respect to this, your Honor.

Mr. L. E. Lyon: It certainly was with regard to this.

The Court: Well, the record will show.

Mr. Scofield: The record will show exactly what transpired.

The Court: Proceed. Houghton reported to you that Mr. Scofield had said——

The Witness: That Mr. Scofield had said that B and W could not offer those scratchers or sell them to Gulf because he was going to obtain claims in his then pending Application No. 627,013 which would cover, or "read on" was the expression he used, the device which we had forwarded there, the two 5½-inch scratchers.

So Mr. Houghton said, in view of that, he was not going to carry on any further discussions about prices or volumes or deliveries, and with respect to this type of those [3246] particular scratchers.

(Testimony of Kenneth A. Wright.)

Q. (By Mr. L. E. Lyon): Did Mr. Houghton tell you at that time in that conversation that Mr. Scofield said that if Gulf bought those scratchers he would sue the Gulf?

A. He didn't say it in those exact words. Mr. Houghton said, "I am not going to buy your scratchers or recommend to Gulf that they do buy your scratchers, because I am not going to take the risk of having the Gulf Oil Company sued by Mr. Hall and Mr. Scofield," so he said, "You will have to convince me further that you have the right, and that is my position, because I am not going to get Gulf Oil Corporation involved in a lawsuit."

Q. Was anything ever further done then by B and W with respect to the scratchers like Exhibit 88, other than the request that the two of them sent to the Gulf be returned to B and W?

A. None whatsoever. But an incident happened there before that meeting closed which was as follows: Mr. Houghton—

Mr. Scofield: What date was this, Mr. Wright?

The Witness: The same date.

Mr. Scofield: When was it?

The Witness: September 9, 1947.

A. (Continuing): Mr. Houghton said, "If you, Mr. Decker and Mr. Wright, can obtain from some patent counsel"—[3247] and he offered to provide us with the names of several firms who would pass an opinion upon what Mr. Hall would obtain or could obtain in this Application No. 627,013—he would review their decision or statement, and if the



(Testimony of Kenneth A. Wright.)

people were of sufficient substance, or whatever remark he used, then he indicated that he would probably recommend to the Gulf that they would purchase some.

And so we asked him for recommendations, Mr. Decker not being a patent attorney, and he gave us the name of a Washington firm in whom he said he had his complete confidence in a matter of that nature, and he gave us the name of a firm, Darby, Cushman & Darby, I believe is the name. It might be Darby—the other way around.

Mr. L. E. Lyon: Cushman, Darby & Cushman.

The Witness: And so Mr. Decker and I returned—and we indicated that we would contact this firm, and he stated, “And now it is understood that you will keep me advised on all the matters relating to these scratcher patents and those matters so that I will be fully informed at all times.”

To which Mr. Decker and I said we would.

Upon returning to Los Angeles, Mr. Decker did contact Darby, Cushman & Darby, that is, after having talked with Mr. Maxwell two or three times, and started to provide them with the material which they requested, and this was handled by Mr. Decker at that time, and before those—[3248] and before that thing was finally arranged with this firm in Washington, D. C., and I have reference to the date of December 10, 1947, we were sued by Mr. Hall and through his attorney, Mr. Scofield, and that localized the operation to this area, and I employed the firm of Lyon & Lyon to take up the main prob-



(Testimony of Kenneth A. Wright.)

lem thereafter, and we stopped any correspondence with Darby, Cushman & Darby.

Q. (By Mr. L. E. Lyon): Now, you have one other matter there which you referred to, in the Stormont article, which you desire to direct attention to, if the court has just a moment, so we won't have to go back to that. Will you please state what that is?

A. With relation to this, what I term erratic fill, your Honor.

The Court: And referring now to Exhibit——

Mr. L. E. Lyon: Exhibit 65.

The Witness: Exhibit 65, is that right?

The Court: Exhibit 65?

Mr. L. E. Lyon: Yes.

The Court: All right.

The Witness: In the article by Mr. Stormont, I read as follows:

“The hole caliper surveys were used as the basis for determining the volume of cement required and an arbitrary excess added to insure [3249] the cement column reaching the uppermost scratcher. However, comparison of the actual and calculated amounts of cement and the resulting cement top showed there was little consistency in the proper percentages of cement to be added to the calculated amount. (See accompanying table.) In some wells a 16 per cent excess brought the top of the cement about 235 feet above the top scratcher, while in others a 14 per cent excess resulted in the top being

(Testimony of Kenneth A. Wright.)

825 feet below the top scratcher. Therefore, Mene Grande has adopted the policy of using 20 per cent excess in areas where hole-size characteristics are not well known.”

And that illustrates what I was talking about as the erratic top of the fill. [3250]

\* \* \*

Q. Mr. Wright, I place before you Exhibit CV-1. I will ask you if you recognize that scratcher?

A. I do.

Q. The scratcher is, is it not, a Weatherford close tolerance scratcher? A. It is.

Q. And that scratcher was purchased by you personally, I believe?

A. It was purchased by B & W through my instructions.

Q. From what company?

A. Howard Supply Company of California.

Q. That scratcher, Exhibit CV-1, is like what, Mr. Wright?

A. It is identical to a close tolerance scratcher which Mr. Hall placed in evidence during the Patent Office proceedings, during the period that we took depositions in Houston in the early part of 1953.

Q. Do you recall, Mr. Wright, the number given to that exhibit or letter given to that exhibit in the Patent Office? A. No, I do not. [3270]

\* \* \*

Mr. L. E. Lyon: That was applicant's exhibit 49 of the Patent Office proceedings.

(Testimony of Kenneth A. Wright.)

Mr. Scofield: Of the public use.

Mr. L. E. Lyon: Of the public use, yes.

Q. Mr. Wright, I place before you three scratchers which have heretofore been marked as exhibits—I will get them in order—EG, EI, and EK for identification, marked by me. I will ask you if you know what these scratchers are? If so, tell us what they are. A. I do know what they are.

Q. Wait a minute. I missed one. I thought I had [3271] missed one in the series. I believe in that set, also, Mr. Wright, there is Exhibit EF that I have marked for identification. Does that conclude this set?

A. That does, Mr. Lyon. There is one part missing, Mr. Lyon.

Q. Which part?

A. There is a wire removed from Exhibit CV-1. It would not be in the group you are looking at. It would be in the group offered earlier, in this group in front of the clerk.

\* \* \*

A. I think your question is addressed [3272] to Exhibits EI—starting with EG, -I, -H, and -K, is that correct? A. Yes, that is correct.

Q. Exhibit EI—correction. I will start with Exhibit EG. Exhibit EG is a five and one-half inch Weatherford Oil Tool Company scratcher which was purchased from Howard Supply Company recently, and I mean within the last four or five months, according to my present recollection, and

(Testimony of Kenneth A. Wright.)

at that time I think either three or four, and it could have been five, were purchased from Howard Supply Company. And this is a device which was sold to us as a five and one-half inch Weatherford scratcher with five-inch bristles.

Mr. L. E. Lyon: Mr. Wright, let me get this record correct, because what we are talking about, this device marked EH, "EH" has been scratched out and that is EF for identification, not EH. There is no EH here in this set of models. [3273]

\* \* \*

The Witness: Exhibit EI is one of those same group of scratchers purchased at the same time as Exhibit EG, and after purchasing it, I instructed a machinist to place a small rod in through the coils of the scratcher fingers and orient them so that the axis of these coils is on line with the radius of the device itself, and to leave in its original condition the angular relationship of the wire as related to the axis of the coil.

So it is a case of bending over, or it might be called that, and moving into alignment the axis of the coil with the radius, the different radii of this particular sleeve.

So that, as a result of that, these wires then have a tangential relationship, and that is a very vague term at this moment, because none of the wires, none of the fingers actually extend from the periphery, so I am at a loss to define that thickness inasmuch as they do not touch a circle, and the tangent

(Testimony of Kenneth A. Wright.)

must touch the circle, be in contact with the circle.

Q. (By Mr. L. E. Lyon): Well, isn't it correct, Mr. Wright, to say that the wires extend in a direction parallel to a tangent?

A. That is good terminology. They are at right angles [3275] to a radius extended, would be another way——

Q. Yes.

A. The radius being extended beyond the periphery of the circle.

Exhibit EF is one of the three or more close-tolerance scratchers which were purchased at the time Exhibit CV-1 was purchased, and all of the wires were removed by removing first the rivets and taking the wires out, and when you remove the rivets you have the wires retained in there complete, entirely complete in every respect, without deformation of any nature, such as were used when they assembled the device originally. All they did was to take out the rivets, your Honor, that held them in place.

So this Exhibit CV-2, for example, can be placed back in this Exhibit CV-1 and held in place by fingers or a small bolt, or in conformation to what I have said is actually the casing.

The Court: The wire which you have removed is Exhibit——

The Witness: CV-2, your Honor, having come from Exhibit CV-1. And I will call your attention

(Testimony of Kenneth A. Wright.)

to this point on Exhibit CV-1 where this wire CV-2 was removed.

Exhibit EF, as I have just stated, is a part of the group of close-tolerance scratchers purchased at the time this CV-2 was purchased, and all the wire fingers were removed, as I have just stated, by removal of the rivets [3276] themselves, and then the wires placed to one side.

Following that, it was my instructions to a machinist to make a conical coil and place it having the first coil or base coil on one diameter, and each succeeding coil——

Q. (By Mr. L. E. Lyon): Or turn, isn't that the proper term?

A. Correction. That would be a better word, yes—for each succeeding turn being smaller in diameter than the preceding one, so as you view it in a side direction it simulates a pyramid or cone, which is the word I would like to use here.

So the instructions were to make four turns, and, after completion of that, to extend the finger itself from the axis of that conical coil at right angles to the axis of the coil, and to complete the assemblage of coils in as vertical section as possible, although not to go to extremes on that because that would go into precision which would be, you might say, not necessary in a device of this nature and for the work that it is required to do.

So this product here, this Exhibit EF, is the product of those instructions. The shell of this device, or the sleeve, the collar, is one of the original.

(Testimony of Kenneth A. Wright.)

The rivets are not of the original, nor neither are the two small bolts here with wing nuts affixed to the outside, screwed onto them, rather, so that they can be removed for inspection, [3277] for any examination that might be desirable or required.

So this is then, at this time, a conical-coil device with four coils. It is a close-tolerance scratcher and it has wires projecting from the axis of the coil at right angles, and the axis of the coil is radial with the sleeve itself.

Mr. Scofield: Did you mean in that previous answer four coils or four turns?

The Witness: Correction. Four turns. And if I have made that error at any other time, I wish that correction made. I do not mean four "coils," but four turns in the coil.

The device EK was purchased with a shell or collar, so it was purchased at the same time as Exhibit CV-2. The rivets were removed, the wire fingers were removed, and thereafter my instruction to the mechanic was to make a conical coil having four turns, and to have the axis of the conical coil in alignment with the radius of the sleeve or collar and to have the wire project from the uppermost turn of this coil at an angle identical to that extending from the device of the Exhibit CV-2.

So that, for comparison, this set of fingers, CV-2, can be placed in this Exhibit EK, by removing either one of these two fingers here which have this demountable accommodation provided, and confirm

(Testimony of Kenneth A. Wright.)  
any part of it which might be required or [3278]  
desired.

I believe that covers the list, Mr. Lyon.

Q. (By Mr. L. E. Lyon): You have covered all four models?

A. And I neglected to say, then we have this end product, a close-tolerance scratcher (indicating device).

The Court: The close-tolerance characteristics depend upon the machining or manner of the fabrication of the collar, is that correct?

Q. (By Mr. L. E. Lyon): Just state what your understanding of "close tolerance" means, Mr. Wright.

A. "Close tolerance" probably refers to the problem at the well rather than in the machine shop. It originates at the well rather than in the machine shop or in the fabricating shop.

We, in the drilling of these wells—many men have different ideas on what the proper size relationship of casing is that they have placed in the well, as to the hole they drill, that is what the bits are.

Some operators, for instance, want to put 5½-inch outside-diameter casing in a 9⅞-inch drilled hole, and in some fields they find that it is to their idea of what is the best. And some other operator will say, "Well, I will put 7-inch casing in that same diameter drilled hole." And somebody else says, "Well, I will put 7⅜ in that same size drilled hole." And someone else says, "I will put [3279] 8⅝-inch casing in that same hole." And they will



(Testimony of Kenneth A. Wright.)

perhaps do that in the same field if enough property owners are there, so that it would permit that many different kinds of operation.

The Court: And if he gets a good well, it proves he is right?

The Witness: Well, it proves to him that he is right.

The Court: A pragmatic test?

The Witness: There are many conditions arising out of those.

The Court: Does the "close tolerance" refer to the fitting of the bristles into the scratchers or the collars?

The Witness: It is intended to refer to the distance remaining between the outside diameter of the casing and the diameter of the drilled hole.

The Court: But it refers to the tolerance of the bristle?

The Witness: It refers to that and it can actually refer to the actual net wall thickness of the device itself.

The Court: That is the collar of the scratcher?

The Witness: This sleeve, the collar, that is right. As for illustration, if there is an  $8\frac{5}{8}$  outside-diameter casing and a  $9\frac{7}{8}$  drilled hole, a device which would have an inch in thickness here (indicating) would certainly be inoperable because the outside diameter then, including the [3280] tolerances which are required here to make it freely movable upon the casing—you would end up with a device bigger than the bit itself, and it wouldn't go in the hole.

(Testimony of Kenneth A. Wright.)

The Court: Is the close-tolerance scratcher different from the ordinary scratcher?

The Witness: None whatsoever, your Honor.

The Court: It is just the size, is that it?

The Witness: Well, it is, you might say, a very, very small diminution of this net thickness here, but if you add them all up from the top of the rivet to the top of the coil on the inside, then, if you were going to make a meticulous examination, you would go that far. Otherwise, well, I don't know, it doesn't seem to do very much in my book of drilling oil wells.

The Court: Is the virtue of it involved more for length of the bristles?

The Witness: No, no. You can always add more bristle on these. As you note here on one of the devices, you just cut the wire off at any length you want. No, I don't think there is any controversy of the parties on whether one, two, three, or four inches will do the effective abrading.

The point is that a dimension of the collar itself, which will permit of the sleeve in relation to this annular space between the outside diameter of the casing and the inside diameter of the hole, using the bit as the point of [3281] reference.

Q. (By Mr. L. E. Lyon): You spoke, Mr. Wright, of the tolerance, the size tolerance in the casing, and I believe you have presented a model, Exhibit EN for identification, for the purpose of illustrating what you were talking about regarding

(Testimony of Kenneth A. Wright.)

the casing tolerance. Will you just explain what Exhibit EN is?

A. Exhibit EN, this exhibit is made of aluminum to facilitate the making of this particular model, but it demonstrates what the condition is existent in this industry of the tolerance in diameter permitted by the American Petroleum Institute Code and the manufacturers of the tube itself, the casing, and in that sense they are all tubes.

Now, it is possible to turn a shaft for precision diameter. That is without question.

But the making of the tubes does not warrant going back and turning to precision diameters for their lengths, so we have a tolerance permitted in any A.P.I. codes, and there is present here an A.P.I. code.

Now, the tolerances in diameter are related to the diameters as a percentage. For instance, the A.P.I. code says that you may vary the diameter plus or minus and it is still in the length of the joint of casing that you purchase, three-fourths of one per cent of the diameter. You do not relate it to a set dimension. You relate it to a percentage [3282] of the diameter.

The Court: If it is a 7-inch casing, then they vary?

The Witness: Three-fourths to seven-tenths, seventy thousandths, plus or minus.

So, if you view a joint of casing, let us say, 40 feet in length, you would then be buying, if you were the purchaser, a joint of casing in which any

(Testimony of Kenneth A. Wright.)

one of these three diameters, over or under, would be existent at any place throughout the whole length, or any combination which the rolls might have produced at the time the joint of casing was manufactured.

Mr. Scofield: What do you mean, Mr. Wright, by "a joint of casing"? Do you mean a section?

The Witness: We call a joint of casing the single length you buy. Now, for instance, that piece of aluminum lying there is a joint of casing  $3\frac{1}{2}$  inches in diameter.

The Court: That is, there are ranges?

The Witness: Your Honor, we divide it into range one, range two, range three, those being 20-foot plus or minus 2 feet, 30 feet plus or minus, and 40 feet is range three. You could purchase a 40-foot casing and you might have a joint of as much as 44 feet there, and you might get one as low as 36 feet in length, and again the code is met, when you do not get more than 20 per cent less, less than some set dimension, or they will average 40 feet, without any of [3283] them being less than 36 or none of them over 44 feet, something of that nature.

So you buy a range one, range two, or range three casing.

The Court: These are not machinist's measurements?

The Witness: That is right.

Q. (By Mr. L. E. Lyon): Now, in this casing size there are rather acute measurements, Mr. Wright. Just how much is a 7-inch casing permitted

(Testimony of Kenneth A. Wright.)

to vary, as shown by this model you have, Exhibit EN? You have the actual variable, permissible dimensions right on the face. Will you put them right into the record?

A. Just a minute. When you purchase, as, for example, one joint, let us say a 7-inch casing, range three, and assuming you get a 41-foot joint because of that purchase, the so-called nominal diameter is 7.00 inches. You bought a 7-inch casing, and I would call that the nominal size. But within the tolerance of that 41 feet I have just explained there, part of it could have a diameter of 6.948 inches, as an illustration, which would be the maximum undersized diameter, and any part of it could be 7.053 inches, being the maximum. Now, as a result, you have met those specifications, and if you ordered that, you bought the joint of casing because it met specifications according to the standard of the A.P.I. in the trade.

Now, let me give this added illustration: If this were [3284] 20-inch casing, your Honor, and we do have casing up to 20 inches in diameter—outside in all cases—then one per cent of that would be 200 thousandths, and three-quarters of that would be 150 thousandths. Now, an eighth of an inch is 125 thousandths, so we have added 25 thousandths more than I stated as an eighth, to visualize the thing.

So this step here, from minimum to maximum, could be over a quarter of an inch and then it is quite observable, but you won't see it with the eye in looking at it, but if you test it with calipers and

(Testimony of Kenneth A. Wright.)

accurately determine it, those variations will be of that magnitude.

Q. Now, the significance of that, Mr. Wright, in those allowable variations, is it not, is the fact that the collar of the device which fits on the casing must have a maximum diameter to go over the largest allowed tolerance and so that it will move freely, isn't that correct?

A. Well, I don't like the word "fit." If you say "slide"——

Q. All right, slide.

A. That is true. So, as illustrated, between these two stops on Exhibit IIII there is a varying diameter between those. You must go over the highest, greatest diameter and disregard the fact that on the other side it may go back to the minimum tolerance.

So that illustrates, when you point out to anyone in the [3285] trade a device mounted with stops, such as this is, he visualizes and knows that this condition is existent because it has been that way, I know, since before the A.P.I. code in 1923, and I know it was in existence before that because you can't manufacture these tubes——

The Court: If you had a scratcher for a 20-inch casing, then you would have to have the diameter of the collar of the scratcher over  $20\frac{1}{4}$  inches?

The Witness: That is correct, and it would be a sloppy fit at places, too, and to compensate for that it requires more lugs on the casing and bending the lugs, or else the thing will——

(Testimony of Kenneth A. Wright.)

Q. (By Mr. L. E. Lyon): Cant?

A. —cant, or possibly drive up on them, because you might put the lugs in inadvertently on the lowest diameter.

And then your scratcher here would be manufactured to provide for the maximum diameter, because we place the stopping points on a joint of casing on straight lineal measurement, say 10 feet apart. We do not take calipers and see what the 10 feet is they put on the joint. We just say, "Put them on 10 feet apart, on all the joints of the casing."

The Court: All those scratchers are, I suppose, the same size?

The Witness: That is right.

The Court: Within a size range, they all measure the [3286] same?

The Witness: That is right. A 57/8-inch casing size scratcher is made with the objective that it will slide freely over a maximum diameter found on the 51/2-inch casing which will be found in the [3287] field.

\* \* \*

Mr. L. E. Lyon: No, it is not. I am offering it now.

The Court: Exhibits EN, EI, EG and EF?

Mr. L. E. Lyon: And EK.

The Court: And EK are now received in evidence. [3288]

\* \* \*

Q. (By Mr. L. E. Lyon): I will place before

(Testimony of Kenneth A. Wright.)

you, Mr. Wright, photostat heretofore marked by me FK for identification, together with the original A.P.I. specifications from which it is taken, and ask you to state what the document FK for identification is?

Mr. Scofield: That won't be necessary. I will stipulate that it is the A.P.I. casing size. What is the title of it, Mr. Wright?

The Court: Stipulate the exhibit is genuine and in all respects what it purports to be?

Mr. Scofield: Yes, sir; I will stipulate that.

The Court: Received in evidence. [3291]

\* \* \*

Q. Mr. Wright, you have prepared a model of the casing of a certain size, together with its appendant parts, and have also prepared an aluminum model of certain shoes which ordinarily are affixed to such a casing, these devices having been heretofore marked Exhibits EM-1, EM-2, EM-3, and EM-4. [3292]

I wish you would explain these devices.

You have also here present at this same time a model heretofore marked Exhibit EM-1, which is not a model but an actual device of a float shoe, Baker Cement float shoe. Will you explain these devices?

And I believe, also, you should explain with reference to the model of the casing the manner and demonstrate how the scratchers like Exhibit



(Testimony of Kenneth A. Wright.)

IIII or similar exhibits are actually mounted on such a casing in the field.

The Witness: Will it be all right to place those back in the box?

Mr. L. E. Lyon: Yes. I will take all of those out of your way that you are not going to use. In fact, I will give these to the clerk so he can mark them.

The Clerk: If you will let me have those to mark.

A. This Exhibit EM-1 together with Exhibit EM-2 is meant to represent, first of all, a joint of casing. In this particular instance it is  $3\frac{1}{2}$  inches outside diameter, a size which is available in the trade.

The part, Exhibit EM-2, is what we call as a protector, which, if fully stated, would be a thread protector. So when we purchase a joint of casing we expect to have a thread protector on it, otherwise the thread would be damaged and it would not be usable at the well. So it is removable easily by hand, but occasionally they have to use a [3293] wrench; and in this instance I have taken the precaution it was not screwed up so tight but what I could remove it by hand.

So there is an exhibit here and instructions for how to mount scratchers, and I believe it is called Exhibit HH; and there is a bulletin 101 which also has instructions for how to mount scratchers on the casing. And it states that you decide, first of all, how far apart you want your scratchers, and you measure off those dimensions in straight linear

(Testimony of Kenneth A. Wright.)

amount. And I am going to disassemble this device, Exhibit IIII, for the purpose of taking this scratcher from here to make it usable in this demonstration.

The Court: The scratcher, Exhibit IIII, is the exhibit?

Mr. L. E. Lyon: The scratcher is IIII, your Honor.

The Witness: IIII is the scratcher itself, your Honor.

The Court: Very well.

A. And so, in order to make it complete, there is another one around here somewhere.

Mr. L. E. Lyon: What do you want?

The Witness: A 3½-inch scratcher.

Mr. L. E. Lyon: Do you want another 3½-inch scratcher?

A. Well, having marked off with a piece of chalk where the scratcher itself—and I have a piece of chalk in my hand—where each one of them might be positioned on this linear dimension we have previously mentioned, and I will make two chalk marks on this Exhibit EF-1, and then I [3294] will slide the scratcher on the joint of casing up to that mark and slide this second 3½-inch scratcher—

Q. Just wait a minute. This scratcher that you just slid on there is Exhibit EC. Now, you are going to slide a second scratcher on there, which is Exhibit IIII, is that correct?

A. That is correct. And I will slide that onto the other point which I indicate. And then, according

(Testimony of Kenneth A. Wright.)

to instructions and the practice in the field, would be to mark off six inches either above and below the scratcher and place a chalk mark. And I am estimating these distances and making the mark. And then in the field, as we did in the Kelly well and all the wells thereafter, use a piece of chalk and make a ring around the casing in that manner there, mark out those two chalk marks approximately one foot apart and then tell the welder to place his four beads evenly spaced at that [3295] mark.

\* \* \*

A. \* \* \* But the two documents I refer to which are in evidence are the two, and they say six inches above, roughly. So, in that instance, the second scratcher, you would make the mark around, using the scratcher collar as more or less the guide, so that the welder does not place the beads unevenly around the circumference or periphery of this piece of casing, and so they are evenly spaced around and have, at least as far as his eye can determine it, are evenly all presenting a square shoulder for uniform stopping.

So we don't go quite to this far extreme. We found that was, you might say, too time-consuming; and if it is too time-consuming, it is costly.

The Court: You are referring now to the welding rod that is welded on Exhibit?

The Witness: CF.

So, as a result of that, the device is free to slide

(Testimony of Kenneth A. Wright.)

and free to turn between those, with those limitations, on the casing.

The Court: Is it of any importance that the lugs themselves be lined up up and down the length of the casing?

The Witness: No, your Honor. You mean in the vertical [3296] alignment?

The Court: Yes. The only important matter there, I take it, is that they be evenly spaced around the casing?

The Witness: Evenly spaced and, as near as possible, not in an uneven profile around the casing so that they bump one and not the other, but they are a stop only effective on one lug. They should be, as best as possible, uniformly distant apart. So I say the ideal objective, if it were regulatory, would be to have such as I have here illustrated in CF, such as illustrated in the Exhibit X, the Jones report.

The Court: That would be welding rod entirely going all the way around the casing?

The Witness: That is correct, your Honor. As soon as we point out to a shop man or welder an individual joint and say: "Put the shoe on that joint" it takes, what you might say, new identity because it becomes the shoe joint, and thereafter is the shoe joint rather than one of the other joints in the string, and I mean a string of casing.

In the period up to about before 1925, or approximately those dates, perhaps six months or a year on

(Testimony of Kenneth A. Wright.)

either side, but very close on either side, we used on the casing a shoe similar to Exhibit EM-3.

This is meant to be a 3½-inch casing shoe, which it represents, and you can find cable tool industry still uses [3297] shoes of this nature, identical to this. And so when this casing shoe is screwed onto the joint and then becomes the shoe joint, and that is the first joint which is lowered into the well; and from thereafter you have the shoe joint and you have the shoe on the joint, and those are reference points that oil men talk about continuously in talking about an oil well. "Where is the shoe? What is the depth of the shoe, your lower extremity of that particular casing?"

So this "shoe" nomenclature comes in very frequently in lowering into the well a string of casing having a shoe like this Exhibit EM—and that was the standard practice for many years. As we lowered the casing in, and you assume that the rotary drill hole is full of fluid at the time you start into the well, and for good safety precautions tell you to keep the hole full at all times, because if the fluid level should drop to some depth of which you don't know the top, blowouts can occur. And those are part of the safety regulations: Keep the hole full. That is the way it is said. And if you keep it full of mud, you can see the fluid rise in the annulus space there outside of the casing and would also enter the casing through the shoe because there is no restriction whatsoever. The casing is open.

This shoe has this beveled edge for two reasons:

(Testimony of Kenneth A. Wright.)

One is that it will shear to some extent going in if it is required, but the bevel on the inside is also required [3298] because tools which are run and use this after the casing is set in the well have to be withdrawn, and if you had a reverse angle there, they might become engaged and you could not draw them through it upwardly. So this bevel is equipped to be sufficient to not cause the tools to hang up, as we call it; in other words, be the first start of a fishing job.

During that period when casing was run in the wells, equipped in the manner I have described, it was common practice to, as I described it, break circulation while running in, because you are shearing off some filter cake on the outside, and some of that heavier or more viscous mud would rise on the inside. And you could not prevent it. You made no effort to prevent it. So the casing would become logy, as we call it. So it was the standard practice to put on the circulating head, reciprocate and circulate for a while until you get everything again in equilibrium.

And what I mean by that is, you can actually have a mud system where the specific gravity or weight would actually be variable in the stream itself. You have a heavy mud spot and a light mud spot; so you bring the thing into equilibrium, circulate long enough to gain that specific gravity uniform throughout the circulatory system, and then you progress again. A particular point might be observed, with the driller himself being very ex-

(Testimony of Kenneth A. Wright.)

perienced, [3299] when the casing was getting logy; he had the particular sense of touch that said, "Now is the time." And so many operators, for instance, the bigger oil companies, say: "Well, let us take it out of his hands. You circulate every 20 joints whether it gets logy or not."

Maybe you could run 30 joints without doing it, but find it better practice every 15 or 20 joints, whatever they would say. Then it is a straight requirement.

After a while along came a manufacturer—and I don't remember who it was, but several of them—made little guides such as I have in my hand here, Exhibit EM-4. And the purpose of this particular thing called a guide—in this case it is a shoe guide. We use the guides to apply to lots of devices in this industry, apparently. Well, this would be made out of cast iron and just as light as they could make it and hope to do good work in helping getting the casing in the well, yet not be so heavy that you could not drill it after, because you are going to make holes in lots of instances below.

So this device, EM-4, slides into the shoe, EM-3, and then, as is indicated here on the side of EM-4, little cutout sections internally—they would either braze or weld very lightly, just enough to make the particular guide secure in there for the particular job, because it is only a one-trip job in the hole and remains there for the life of the [3300] well or forever.

After these devices came out and began to be

(Testimony of Kenneth A. Wright.)

used, operators observed that they could run more casing without resorting to breaking circulation. They were actually getting benefit of this hole in the bottom by restricting the amount of fluid which would come in every time they lowered a joint. So they were in effect displacing the fluid in the annular space above to a certain amount every time they lowered each succeeding joint into the well. They were in effect doing a little breaking circulation themselves with the joint of casing, if you see what I mean.

So it did not take more than, you might say, a year or so of that in experimenting with the size of these holes with the bottom of this Exhibit EM-4 until the next development was the introduction to the industry of the so-called float shoe.

And this is a shoe which I purchased from Baker Oil Tools here within the last four or five months—I don't recall—Exhibit EM-5. This happens to be steel, your Honor, and it is heavy, so if I don't hold it. But it is identical in the outside shell form as this device, EM-3, but all of the internal sections which you see here are made of cement. There is a ball in there that is made of plastic which has a specific gravity that causes it to always float in mud. So as soon as you immerse this in fluid, in mud in [3301] the well, the ball rises and closes the valve. So it eliminates relying upon a spring to close the valve and provides a condition where no metal of any nature is in the device, because you don't like



(Testimony of Kenneth A. Wright.)

to strain metal in the well, your Honor; it is bad practice.

So we go from the plain shoe to the shoe with the guide to the float shoe, and that is the progress that took place in the early 20's.

Now, as I said, this cement is drillable here, which is far more preferable than drilling up this piece of cast iron, the guide.

The Court: Then that ball closing the valve prevents the mud from rising in the casing at all?

The Witness: That is correct. So instead of filling the casing from the shoe upward, we go to filling the casing from the top end at the floor of the derrick, and then we set up regulations. Well, then there, again, it depends upon what the man's personal opinion is, how often to fill up the casing. But the point is that every time you lower a joint of casing into the well and it has a float shoe on the bottom, you displace upward in the annulus a volume equal to the net volume of that joint of casing the same as if it were solid, and that is actually breaking circulation while running in, if you see what I mean. You cause an upward displacement. So as you run casing into the well with [3302] equipment such as I have described, with this float shoe on, you get returns to the surface which you observe. In other words, it overflows just the same as if you would stick a large bolt into a glass of water; you would have an overflow. That is as simple an illustration as you can make.

If you do not have overflow, then you know that

(Testimony of Kenneth A. Wright.)

something is not desirable that is going on. So the driller observes, as he states: "Am I getting returns?" And he will ask the derrick man to go and look at the ditch, "Am I getting returns," every time he drops a joint in. That is the language he uses.

So after the use of these devices, this shoe device for a short time, the operators found they could run more and more casing without resorting to breaking circulation.

Then they realized more accurately, let us say. Many strings of casing run clear to the bottom. It was not required as long as they were sure they were getting returns each time they lowered in a joint, so that was a good indication and a confirmation enough that everything was going all right, the hole conditions were all right; you were not going to get into trouble.

So we progressed, as I just outlined here, from each one of these steps so it finally gets to the place where often wells of extreme depth, you can many, many times run right to the bottom without having to resort to breaking circulation, and going in. But it should be realized that [3303] the casing under that condition removes practically no filter cake from the wall of the well while doing so, but only causes an upsurge and displacement of the fluid mud, not the drilling mud, but filter cake on the permeable strata.

Maybe I had better disassemble this.

Mr. L. E. Lyon: No; just leave it that way.

(Testimony of Kenneth A. Wright.)

I will offer in evidence at this time for the purpose of illustration of the witness' testimony the devices heretofore marked EM-1, EM-2, EM-3, EM-4, and EM-5. [3304]

\* \* \*

OSCAR GAY

called as a witness by the defendants, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. L. E. Lyon:

Q. Will you state your name, please?

A. Oscar Gay.

Q. What is your residence, Mr. Gay?

A. 114 Pomona Avenue.

Q. What is your age?           A. 61.

Q. How long have you been around the oil fields in [3305] and about California?

A. About 34 years.

Q. What was your occupation in February or March of 1952?

A. I was with the Weatherford Oil Tool.

Q. In what capacity?           A. A salesman.

Q. Located where?           A. At Long Beach.

Q. Did you have any conversation in February or March of 1952 with anyone connected with Jesse E. Hall, Sr., or connected with the Weatherford Oil Tool Company, with respect to the Kelly well operation?

(Testimony of Oscar Gay.)

A. Well, I did. I wouldn't state any specific date.

Q. Who was it? A. Mr. Hall.

Q. Which Mr. Hall? A. J. E., Sr

Q. Where?

A. I think that was in Los Angeles, in Mr. Subkow's office.

Q. And as a result of that conversation you were instructed to go out and see certain witnesses, were you not?

A. I don't believe I—I don't recall any witnesses. There might have been witnesses [3306] later on.

Q. Certain parties who were subsequently, and were named and were going to be subsequently witnesses, including Mr. Edmonds?

A. I talked to him.

Q. And who else at that time?

A. I talked to Mr. Rutherford.

Q. And who else?

A. Mr. Sweetser was the first one.

Q. Who? A. Earl Sweetser.

Q. Who else? A. I think that was all.

Q. And as a result of your conversations with these men, you got them to sign certain affidavits, did you not? A. I did.

Q. Now, you paid them certain monies for those affidavits, did you? A. I did not.

Q. You paid them a check for \$10.00 for their so-called expenses, which was mailed to them, that is correct, isn't it? A. It is.

(Testimony of Oscar Gay.)

Q. And you paid them a hundred dollars, and a hundred dollar bill in cash, did you not?

A. I did. [3307]

Q. Did you ever meet any of these individuals before? A. No, sir.

Q. Now, it totaled—who told you to pay them the \$100 cash? A. Nobody.

Q. From what monies did you pay them the \$100 in cash?

A. Out of money that I used as I saw fit for the company.

Q. That is, it was company money that you paid them? A. It was.

Q. Did you tell the company that you had paid these witnesses a hundred dollars in cash over and above their expenses?

A. That was paid above——

Q. Just answer the question, please.

A. I did not pay the expense money.

Q. Who did you tell that you paid the money, a hundred dollars in cash, a hundred dollar bill, to the two witnesses?

A. I think I told Mr. Hall.

Q. When?

A. After he mailed me a ten-dollar check for each one of them.

Q. I see. You told him that you had already paid them a hundred dollars in cash? [3308]

A. I did.

Q. And still you gave them a \$10 check, in addition?

(Testimony of Oscar Gay.)

A. He had mailed it to me, and I in turn mailed it to them.

Q. Whom did you give the \$100 to?

A. Well, I paid Rutherford a hundred dollars.

Q. Who else?

A. The other fellow, I think, Edmonds.

Q. Who else?           A. That is all.

Q. And you negotiated with them for their giving certain affidavits which were subsequently filed in a public-use proceedings in the Patent Office at that time, did you not?

\* \* \*

A. I did.

Q. (By Mr. L. E. Lyon): Now you can make any explanation you want.

A. I brought Mr. Rutherford to the Weatherford Oil Tool Company in Long Beach, and Mr. Philip Subkow, associate [3309] attorney, took the affidavit.

Q. Now, was Mr. Subkow present when you gave the witness a hundred dollars in cash, a hundred-dollar bill?

A. No, sir. He was not. It was several days later.

Q. Was Mr. Subkow present with you—and that was Edmonds, was it not?

A. No, sir. That was Mr. Rutherford.

The Court: When you say “several days later,” do you mean after he made the affidavit, when you paid him?

The Witness: Yes, sir.

(Testimony of Oscar Gay.)

Q. (By Mr. L. E. Lyon): And you knew, did you not, that these parties having given these affidavits would be called in the public-use proceedings matter? A. I did not.

Q. You were informed that the Kelly well had been specified on behalf of B & W as an incident of prior use? A. I did.

Q. And you knew that these parties, Edmonds and—who was the other one, Rutherford?

A. Rutherford.

Q. —were parties who were present on the tower on December 31st when the B & W scratchers were run in the hole?

A. I did not know it. I was told by Mr. Sweetser, the superintendent, who were the men that worked on the well, [3310] and I went to see them.

Q. You were told, and they told you that they were on the tower when the B & W scratchers were run, didn't they? A. That is right.

Q. And it was after that that you presented to each of them a hundred-dollar bill, is that correct?

A. After they had made the affidavits, I did, and ran several days back and forth to my office.

Q. Were either Mr. Scofield, Mr. Hall, or Mr. Subkow present when you presented a hundred-dollar bill to either of those witnesses?

A. No, sir. They were not. I don't think they were in the State.

Q. But the money that you paid to them was Weatherford Oil Tool Company money and was subsequently reimbursed to you by the company and

(Testimony of Oscar Gay.)

A. He had mailed it to me, and I in turn mailed it to them.

Q. Whom did you give the \$100 to?

A. Well, I paid Rutherford a hundred dollars.

Q. Who else?

A. The other fellow, I think, Edmonds.

Q. Who else?           A. That is all.

Q. And you negotiated with them for their giving certain affidavits which were subsequently filed in a public-use proceedings in the Patent Office at that time, did you not?

\* \* \*

A. I did.

Q. (By Mr. L. E. Lyon): Now you can make any explanation you want.

A. I brought Mr. Rutherford to the Weatherford Oil Tool Company in Long Beach, and Mr. Philip Subkow, associate [3309] attorney, took the affidavit.

Q. Now, was Mr. Subkow present when you gave the witness a hundred dollars in cash, a hundred-dollar bill?

A. No, sir. He was not. It was several days later.

Q. Was Mr. Subkow present with you—and that was Edmonds, was it not?

A. No, sir. That was Mr. Rutherford.

The Court: When you say “several days later,” do you mean after he made the affidavit, when you paid him?

The Witness: Yes, sir.



(Testimony of Oscar Gay.)

Q. (By Mr. L. E. Lyon): And you knew, did you not, that these parties having given these affidavits would be called in the public-use proceedings matter? A. I did not.

Q. You were informed that the Kelly well had been specified on behalf of B & W as an incident of prior use? A. I did.

Q. And you knew that these parties, Edmonds and—who was the other one, Rutherford?

A. Rutherford.

Q. —were parties who were present on the tower on December 31st when the B & W scratchers were run in the hole?

A. I did not know it. I was told by Mr. Sweetser, the superintendent, who were the men that worked on the well, [3310] and I went to see them.

Q. You were told, and they told you that they were on the tower when the B & W scratchers were run, didn't they? A. That is right.

Q. And it was after that that you presented to each of them a hundred-dollar bill, is that correct?

A. After they had made the affidavits, I did, and ran several days back and forth to my office.

Q. Were either Mr. Scofield, Mr. Hall, or Mr. Subkow present when you presented a hundred-dollar bill to either of those witnesses?

A. No, sir. They were not. I don't think they were in the State.

Q. But the money that you paid to them was Weatherford Oil Tool Company money and was subsequently reimbursed to you by the company and

(Testimony of Oscar Gay.)

after you had told them that you had spent the money for that purpose?

A. The money was in my trust.

Q. Just answer.

A. For purposes that I saw fit, for I was purchasing other material being used by the company and at my discretion, I was told that I might pay them what I thought it was worth, and after several days back and forth to my office and writing the affidavit—the man was a welder, and I kept him and his truck and the machine standing in front [3311] of my office several times, and I had to even go and square him with his boss for keeping him away from the job. I gave him a hundred-dollar bill.

Q. You were present when Mr. Edmonds and also Mr. Rutherford testified that the amount of \$10.00 that they received was the total compensation for their expenses, weren't you, in the Patent Office proceedings?

A. The record will have to stand on that. I wouldn't state they did or not.

Q. Now, Mr. Gay, you have been acquainted with Mr. Jesse E. Hall, Sr., for many years, have you not?      A. I have.

Q. And I place before you a document which has heretofore been marked as "Gay deposition Exhibit D." I will ask you if you are not familiar with that document?      A. Yes.

Q. You were present and saw Mr. Jesse E. Hall, Sr., sign that document with his son's name and

(Testimony of Oscar Gay.)

swear that he was Elmer D. Hall, to the County Clerk, were you not?

A. Well, Hall signed this paper on permission of Mr. Elmer Hall.

Q. Just answer the question.

A. I was there.

Q. And you saw him swear that he was Elmer D. Hall?

A. To my knowledge he did not swear to it. That might [3312] have been something else added to it later on, but at the desk it was not witnessed by any notary.

Q. When he signed that, he did not tell the party to whom he presented this document that he was Jesse E. Hall, did he?

A. No; I wouldn't say he did or didn't.

Mr. L. E. Lyon: I believe this document, your Honor, Exhibit D to Mr. Gay's deposition, is already in evidence as Exhibit BN.

I believe that is the same certificate, Mr. Scofield.

Mr. Scofield: No objection.

Mr. L. E. Lyon: That is all. [3313]

\* \* \*

## KENNETH A. WRIGHT

(Recalled)

Direct Examination

(Resumed)

By Mr. L. E. Lyon:

Q. Before the recess you were asked to complete your explanation of Exhibit FT with relation to the Kelly well. Will you complete that answer now, Mr. Wright?

A. Yes, Mr. Lyon, if you will provide me with that drawing which I left in the——

Q. Exhibit FT.

A. It is in one of the copies of the transcript, and I believe it is the one on the top of that table. The drawing is what I want. The illustration B on the right-hand side of the Exhibit FT illustrates the type of condition which was present in the Kelly well there in the Rosecrans field area; that is, there was a productive sand and water to be placed as behind the shoe, or above the shoe, as we call it, and that the production section that they had as their objective was below the point where they made the cementation.

So in that condition we placed the scratchers on the casing opposite the permeable strata so that when, as and if perforated opposite one of those sands, then the production [3324] would be what we call clean, that is, free from water, also called "pipeline oil." Those are oil men's expressions for showing that he got oil free from water. Or if he says: "I have an oil or gas-oil ratio," he means that there

(Testimony of Kenneth A. Wright.)

is no contamination or association, which is a better word, of an excess of gas with his oil production.

And in the Kelly well they drilled out the shoe and made a demonstration for the effectiveness of the cementation with a portion of the hole which is identical to that found in A-2, but that section of the hole below the shoe, it actually was not oil sand, because they had located the top of the sand prior to setting the casing in the well.

The Court: Then chart B on Exhibit FT, to be accurate, would show the shoe almost down to the oil sand?

The Witness: Right almost to the very top of it; that is correct, your Honor. But I was associating this type of thing with the use of the scratchers opposite the permeable strata, and that was the main object, although, as I recall it, they did have water between the gas—oil sand in this case, and the position where the shoe is located.

And in those cases here in the State of California they usually require definite confirmation to use that particular casing program in the well, in that particular well in that field, because we have a general regulation that you should set casing over each productive sand after passing through a [3325] water, but when the thickness of the sand gets to the point where the total ultimate recovery from that sand would not be sufficient to justify the, what we say, “wasting a string of casing”—that is our expression—why, then they will permit a condition where you put two or three of these sands behind

(Testimony of Kenneth A. Wright.)

the casing that you set up at this particular depth.

And in contrast with that, the State of Texas permits you to set through any number of sands.

The Court: To choose your own sand, is that it?

The Witness: But they isolate you very, very—strike the word “isolate”—but they restrict you to production from one sand alone, that is, a zone, and when you deplete that or find it insufficient, you seal it off and go to another. But you do not commingle the sands by productive methods. Here in California they will let you produce numerous sands in the same perforated interval.

The Court: Is that contemporaneously?

The Witness: That is correct, your Honor. And that makes the distinction why they make the rules that I have just indicated.

The Court: In other words, you could have, say, three sands and the oil from those three sands would be entering the casing through perforations contemporaneously and all be commingled together at the surface?

The Witness: That is correct, your [3326] Honor.

The Court: Before they reach the surface?

The Witness: That is correct. The attitude of the engineers in that area is that each sand is a reservoir, an individual reservoir, and to be treated as such.

And that finishes—one further thing that demonstrates that effectiveness of cementation during the period prior to, say, approximately 1930 or '35—I

(Testimony of Kenneth A. Wright.)

don't know the exact year—were carried out as in a tube. And then devices were developed called drill stem testing tools wherein holes may be as casing is perforated and you run this drill stem tester in, which is a packer with instrumentation as valves, and you make a test in a short time just as effective and reproducing just exactly what we did as in A-2 where we actually took the fluid out of the well on a bailer, out of the casing, rather, and reduced the fluid to the point where you find fluid is entering or not entering after letting it remain quiescent for 12 hours, or whatever period they might set as the test period.

So we drove from—the test like in A-2 is still permitted; it is optional. If you do not have any productive sands of any nature above the shoe, why, then you may carry out as in a tube, but it would be cheaper and more rapid, quicker, to get the test done by renting the drill stem test tools.

Q. (By Mr. L. E. Lyon): Mr. Wright, you have testified [3327] that the scratchers were mounted on the casing at the Kelly well. Were you present when they were mounted on the casing?

A. I was.

Q. Did you instruct anybody with reference to the mounting?

A. I instructed the welder how to mount them and watched him while he mounted them so that no mistakes were committed, to be sure my instructions were carried out explicitly.

Q. How were they mounted?

(Testimony of Kenneth A. Wright.)

A. Between stops on the casing of approximately one foot apart and so that they were rotatable and slidable between the stops.

Q. How does that mounting correspond with the demonstration that you have given on Exhibit EM-1 this morning, Mr. Wright?

A. The demonstration I made on EM-1 is identical to how it was carried out in the Kelly well on the casing at the Kelly well. [3328]

Q. (By Mr. L. E. Lyon): Were you there personally throughout the time that the cementing operation was conducted in the Kelly well?

A. I was.

Q. And delivered the 23 scratchers to the Kelly well yourself?

A. That is correct.

Q. And all of those 23 scratchers were mounted on the casing?

A. That is correct.

Q. And all of them are now cemented in the well, then?

A. That is correct.

Q. Mr. Wright, you have at present heard the testimony of Mr. Barkis in respect to your early contacts with the Shell Company and the Standard Oil Company of California, is that correct?

A. I heard it, yes. I heard Mr. Barkis testify.

Q. And did you yourself, personally, contact either of these companies, with respect to any question concerning the patents which you held?

A. No, I did not. I wasn't with Mr. Barkis when we called on Mr. Bates and when we saw Mr. Toussaint.

Q. Now, except for this attempt to license these



(Testimony of Kenneth A. Wright.)

companies to use your methods, did you ever take up with any other company the question of patents, prior to a question of [3329] patents being raised by the individuals of the companies with whom you had contacted or were in contact with?

A. I have not, with one exception. I wrote a letter to Mr. Teplitz in June of 1946, is my recollection, and whatever is in that letter is in the record.

Q. And in that letter you advised Mr. Teplitz that you held patents, is that correct?

A. That is correct.

Q. Had any question been raised by Mr. Teplitz concerning the patents before you wrote that letter?

A. None that I recollect of.

Q. Now, it has been testified by Mr. Houghton in his deposition that you assured him at all times that no suit would ever be instituted against the Gulf Company. Did you personally give Mr. Houghton that assurance?

A. I made that statement to Mr. Houghton.

Q. On more than one occasion?

A. I believe perhaps on two. One was in September of 1947 and one was, I believe, in January of 1950.

Q. Mr. Wright, at the time of a hearing in a preliminary matter in this court in this particular case in July of 1951, I believe we learned at that time that suit had been instituted against your company or distributor or someone in Venezuela, is that correct?

A. I think that we had an indication that such

(Testimony of Kenneth A. Wright.)

things [3330] might be, might happen, a little before that.

Q. But no indication that any suit had been filed? A. I don't think so.

Q. Now, in open court here we endeavored to ascertain who the parties plaintiff and defendant were in that particular suit, did we not, at the time of the hearing in this court?

A. The court record is the best record, but I think Mr. Scofield said, "In case you want to know it, you are being sued," or "are going to be sued," some such words, anyway.

Q. And we endeavored to find out who the parties were to the suit, in the court room right here, did we not?

A. That is my recollection.

Q. And neither Mr. Hall nor Mr. Scofield would tell us who the parties plaintiff or defendant were, would they, or against whom suits were then filed?

A. That is my memory of the record and I think the transcript is the best evidence, but that is my recollection.

Q. And service was made in those suits by publication, was it not?

A. Against B & W, it was.

Q. And the publication date was nearing its end, was it not, at which a default judgment might be obtained, when [3331] we actually found out who was being sued?

A. That is my recollection.

Q. And after finding that matter out, you sent

(Testimony of Kenneth A. Wright.)

me to Venezuela?        A. That is correct.

Q. Well, on going to Venezuela we went through Washington, D. C., did we not?

A. That is correct.

Q. And we called on Mr. Houghton of the Gulf Patent Department with respect to what?

A. For two things. We had just prior to that adopted this practice, in furtherance of your suggestions, of marking the invoices with the stamp of notification of a royalty being separated from the total price charged for the device.

And Mr. Houghton, according to my recollection, had taken exception to it and so we went there for two objectives.

One was to discuss that with him, because, as I recollect, he said he might stop the Gulf Oil Corporation from buying our devices, unless he had further explanation from you and the other objective was to obtain letters of introduction to Gulf's subsidiary in Venezuela, to their executives, so that you would be provided with everything you thought might be useful to you in making this trip to Venezuela on our behalf. [3332]

Q. I believe that we had that conference with Mr. Houghton in Washington, D. C., in his office on the 23rd of July, 1951, and I remember that date because it was July 24th, which was Bolivar Day in Venezuela, when I arrived there by plane, the next day, which was a holiday, so that nothing could be done then.

(Testimony of Kenneth A. Wright.)

Was there anyone other than you and I and Mr. Houghton present at the time we held that conference with him in his office?

A. No. We three were the only people present.

Q. And will you tell just exactly what was said at that time and place?

A. Well, my recollection of the conversations, they were to the effect that you satisfied Mr. Houghton that his purchase of the equipment and being subsequently invoiced in that manner would not constitute an acquiescence of the validity of the patent. At least that is my understanding of what was the controversial point. And upon the assurance from you that that would not, in your opinion, be what was actually the legal premise, he said that in that event he would let the thing stand as it was and not in any manner restrict the purchase of B & W equipment.

Then you asked him for letters of introduction to whoever were the officials in the Mene Grande Oil Company in Venezuela. And he said he did not know the names of them, [3333] even though it was a partially-owned subsidiary, but that he would find out who they were.

So he called Pittsburgh on the telephone and when he called this individual, and I think it was Mr. Vollmer, for the names of the Mene Grande officials to which he should give you the names and the letters of introduction, he said that Mr. Lyon and Mr. Wright were there in his office at the time and had satisfied him as to the matter of the

(Testimony of Kenneth A. Wright.)

stamped invoices, and then he said, "By the way, Mr. Vollmer"—and I think it was Mr. Vollmer, without question, that he thought that he would go ahead and finish that matter about the Canadian patent situation and which he and Mr. Vollmer had been either corresponding about or discussing, and pass out and issue instructions to use no scratchers other than those manufactured by B & W or their licensee thereafter.

That terminated the telephone conversation and Mr. Houghton then, as I recollect, asked you something about how you got certain claims in Canada which were not word for word the same as the U. S. patent and your response was that your firm or you had nothing to do with the processing of the U. S. patent of B & W.

Q. Now, was there any other conversation had at that time?           A. Not that I recollect.

Q. Had we, either you or I, brought up with Mr. [3334] Houghton in any way the Canadian situation?           A. None whatsoever.

Q. Have you given the entire conversation that was had with Mr. Houghton as to the Canadian situation?

A. According to my best recollection, I have stated it all.

Q. It was not either your or my suggestion that any such order or instruction should be given with respect to the Canadian situation, is that correct?

A. That is correct.

(Testimony of Kenneth A. Wright.)

Q. We had not made any assertion that we even held patents in Canada, at that meeting, had we?

A. There was no reference to Canadian patents whatsoever, by you or by myself.

The whole matter came out of the conversation between Mr. Vollmer and Mr. Houghton, while on the telephone, between the two parties.

Q. Now, with respect to these Venezuelan suits, there were two suits, I believe, that were filed in Venezuela almost simultaneously, in the summer or late spring of 1951, were there not?

A. That is correct. [3335]

\* \* \*

Q. (By Mr. L. E. Lyon): Now, the two suits were filed in different districts or states of Venezuela, were they? What were those?

A. There was a suit brought against our distributor, either against his corporate name or against him individually, and I do not recollect which, but it would be against Vacuum Truck Company, a Venezuelan corporation, or against J. D. Bryan, who is the equivalent of the president of that particular corporation, and I think he is termed an administrator, so the suit was against either or both, whichever the particular case might be, and was instituted in Eastern Venezuela in what is known as Estado de Anzoategui.

Q. And that is in what general territory? What was that, what city?

A. In Eastern Venezuela, and Estado de

(Testimony of Kenneth A. Wright.)

Anzoategui is one of the states of the Republic of Venezuela, the same as California is a state of the United States, the suit having origin, as I understood it, in either Cantaura or Barcelona, but the final hearings were held in Barcelona prior to moving [3336] the case to the Supreme Court of Venezuela in Caracas.

Q. And that was in the Eastern District of Venezuela or Eastern portion of the country of Venezuela, was it? A. That is correct.

Q. And that is in the oil field country?

A. That is correct. And the other suit was brought in the Federal District in Caracas, a district, as I understand it, the same as we have in Washington, D. C., that is, Distrito Federo, which is the same as the District of Columbia.

Q. In this suit in Barcelona or in the Eastern District against the Vacuum Truck Company, did the court issue a so-called Inter Dicto?

A. They did.

Q. And an Inter Dicto is what?

A. An Inter Dicto is the same as an injunction.

Q. And how long did that injunction stand?

A. According to my recollection, the Inter Dicto was issued about the 1st of October, 1951, and was cancelled in February or March of 1952. That is my recollection.

Q. And cancelled by what?

A. Well, we appealed the case from the first court to the second court and the second court reversed the ruling of the lower court and dissolved



(Testimony of Kenneth A. Wright.)

the Inter Dicto and that terminated the Inter Dicto which was to the effect that Bryan or Vacuum Truck could not either sell or import Nu-Coil [3337] scratchers into the Republic.

Q. Nu-Coil? Nu-Coil or Multiflex?

A. No, Mr. Lyon. It was against Nu-Coil scratchers.

Q. Now, was an appeal taken from the appellate court's decision dissolving the Inter Dicto?

A. Well, the Corte Superior, if that is an appeal court, then that is what it is.

Q. All right. It was taken to a higher court, that matter, was it not?

A. That is right. The second court dissolved the Inter Dicto and it was thereafter taken to the Supreme Court of Venezuela, and the decision of the Corte Superior was affirmed so that the Inter Dicto is permanently terminated.

Q. Now, there were also two suits filed some time thereafter, in Canada, were there not, Mr. Wright?      A. That is correct.

Q. And those two suits were both filed after July of 1951, after the time that Mr. Houghton gave those instructions with respect to the purchase of scratchers in Canada, were they not?

A. My memory is just a little vague on when they were filed, but that is approximately correct.

Q. Now, one of those suits was filed against the Import Tool Company and was filed by whom, do you recall? [3338]

A. In one of them the complainant was Hall



(Testimony of Kenneth A. Wright.)

Development Corporation of Venezuela, or Porto Rica, as I recall it.

Q. I believe that file is in evidence. And the other suit was filed against B & W, was it not?

A. That is my understanding. [3339]

\* \* \*

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, there were certain proceedings instituted, I believe, in the Patent Office in Mexico by you, known as nullity proceedings in Mexico, is that correct?

A. That is correct.

Q. And that nullity proceeding was directed against the scratcher patent issued to Mr. Hall, was it not?

A. That is correct.

Q. And the Patent Office in Mexico upon that nullity proceeding held the patent lacked novelty, did it not?

A. That is correct.

Q. Appeal was taken on behalf of Hall to the court in Mexico in that proceeding, was it not?

A. That is correct.

Q. The court affirmed the Patent Office ruling, did it not?

A. That is correct.

Q. Then, appeal was taken from the court in Mexico, from the district holding in Mexico, was there not?

A. That is my understanding.

Q. The way this matter stands now, then, rather than in an effort to reduce the number of suits that were filed, which I sought to do when I came into this matter, there are more suits now actually pending than when I started, aren't [3340] there?

(Testimony of Kenneth A. Wright.)

A. I would have to count them up, Mr. Lyon.

Q. Well, there are four in Venezuela and one in Mexico, that is five, and we got rid of four, but one of them was immediately refiled, so we advanced three and got five, is that the net result?

A. That is approximately so. [3341]

\* \* \*

Q. Mr. Wright, after this meeting in the California Club of August 22, 1946, with Mr. Scofield, did you consider that there was any contract existing between you and Mr. Hall?

A. Well, as far as I was concerned I couldn't see how any contract could have existed after the statements he made, followed by the letter which came within the next [3342] three or four weeks.

Q. And those statements and letters advised you as to what?

A. Mr. Hall was not going to pay any more royalties to B & W. That is what the letter said, which followed his statements to us there in the California Club, "us" being Mr. Barkis and myself. And he said that we must sign the amended contract or amendment to the contract which he offered to us, and if we did not, why, we were going to be sued. And it was left on an ultimatum basis—sign it or else—and no more royalties and we are through.

Q. And you advised Mr. Scofield that you would not sign the so-called modified agreement?

(Testimony of Kenneth A. Wright.)

A. I told him that and followed it by not signing it.

Q. And then you, in effect, sat back and waited to be sued, is that correct?

A. Yes, and that event did take place.

Q. I believe, Mr. Wright, there is one other model that you have prepared, which is Exhibit EL, which has been heretofore marked for identification by me and exhibited to counsel for plaintiff.

The Court: Mr. Lyon, have you offered in evidence Exhibit FT?

Mr. L. E. Lyon: I will at this time, your Honor. I did not. I noticed it on the back of FT that I had not [3343] offered it. I will offer FT, the drawing prepared by this witness. [3344]

\* \* \*

Q. Mr. Wright, I am placing before you Exhibit 66 for identification, not having been offered yet, and ask you if this has the charts in it to which you referred?

A. I have enlargements of this Figure 1.

Q. Where are they? Enlargements of what? Figures of Teplitz?

A. There are two sections taken from the Figure 1 at selected depths and enlarged so that very close observations can be made.

Q. Yes. Those are EO, EP, which are in evidence, and EQ. EO, EP and EQ.

A. Will you give me those enlargements, please, Exhibits EO, EP, and EQ?

(Testimony of Kenneth A. Wright.)

Q. Are these what you are looking for?

A. That is correct.

Q. All right. Now, you have before you, Mr. Wright, Exhibits EO, EP and EQ, and Exhibit EL for identification, as well as Exhibit 66 for identification. [3346]

A. Exhibit EQ is a photostatic enlargement of Figure 1, page 116 of Exhibit 66, and the enlargement is about in the magnitude of twice as found in Figure 1 in Exhibit 66. And following the enlargement of Figure 1 in obtained Exhibit EQ, there are two particular sections of that graph which I selected to illustrate the point which I wish to emphasize, and perhaps I might make some comments about this Figure 1, and it contains on the one graph the following information:

To the left is a caliper log which states that the bit size was  $9\frac{7}{8}$  inches, and a vertical line is drawn there to indicate what the bit diameter would be as on that scale, where it would be positioned if the bit had made a perfectly vertical line.

The next assemblage of records there is what is known as the electrical log, which is also known in the trade as a Schlumberger log, that "Schlumberger" being the names of two Frenchmen who brought this into the industry.

The next graph is the temperature log, on which top of the chart you will see the temperature range over which the observations were made, starting at 145 degrees, roughly, and reaching a maximum of almost 260 degrees. Those were the observed temperatures, recorded and observed temperatures, in

(Testimony of Kenneth A. Wright.)

the well when they made the survey to determine the height of the fill.

On the extreme right-hand side is what is known as a [3347] differential gamma ray log, a scale, and those are observations obtained by running an electrode into the casing or into the well and making observations related to gamma rays.

There was in this particular instance a mineral carnotite placed in the cement to be used as a tracer so these determinations could be made by that method.

The particular point that I am going to illustrate, though, is a reference to the caliper log, and coupled with that a reliance upon the electrical log to the extent of taking the writer's statement of what particular formations existed at those points at which we make the observations. And the points which are to be used are, first, the Exhibit EP. EP is an enlargement of that section of the hole starting with a depth of 8420 and terminating in a depth of 8620. By making this enlargement and giving the photostat company the correct instructions we can arrive at a graph from which direct readings can be made without having to go through calculations or computations.

So that, if you will start with the center line, the purple line there on the left called "center line of hole," and then with a ruler which has divisions in inches measure over, you will find that that line is, as shown there, bit radius,  $4 \frac{15}{16}$  inches. Twice what that would be, the  $9\frac{7}{8}$ , the bit diameter.

(Testimony of Kenneth A. Wright.)

The small, white line through the center of [3348] the indicated diameter is meant to mean the center line of that particular mark, it being observable that the width of the lines themselves, if you did not use a center line in them, might provide somewhat a contentious position.

In the area opposite that approximately where it says "bit size" you will note that on the right it says "shale with streaks of sandy shale," and that is an observation made by Mr. Teplitz and Mr. Hassebrock, the authors.

The electrical log indicates, of course, the confirmation that they were looking for.

So at that point we find, if we measure at that point, a positive depth, 8,470 to 8,480. We have a diameter opposite the shale section, as far as the hole calipers gave us the indicated diameter of—I don't have a scale but I have an associated demonstration here which shows the depth—I mean the diameter of the hole at 8,475.

The Court: You were referring last to what exhibit?

The Witness: Pardon. I had not indicated. I was going to point to Exhibit EL, your Honor. And 8,475 is the point at which the observation was made to provide the material for the Exhibit EL which I have before me.

And I will then go to Exhibit—is there a marking on it—EO? Exhibit EO selects that portion of the well starting with the depth of 9,410 and terminating in the depth of 9,630; and there, again, the

(Testimony of Kenneth A. Wright.)

center line of the hole is [3349] indicated, the red line indicating the bit line to be absolutely true vertical, and the white center line through the graph line which was produced by the hole calipers when they made the recordation.

Now, at 9,560 to 9,575—'74, rather, you will note that a little symbol is made and the word "perf" is written thereon, which was on the original, meaning that is the point they perforated the well for production.

And over on the right-hand side you will see the word "sand" and from the electrical log present and opposite thereof, they determined that those were oil sands, not water sands or gas sands, but oil sands. So that is the place where they perforated the well and emptied to make the successful completion.

The diameter observed, indicated by the hole calipers at that point, is also about 8 13/16ths, which I am reading from this Exhibit EL.

So with that material for a basis to work, I have produced this Exhibit EL, which——

May I put these here, your Honor?

The Court: Yes.

A. This Exhibit EL illustrates—there is one further point I overlooked, your Honor. In the range of depths starting 9,410 and terminating at 9,470 you will find the diameter of the hole reaches almost 15 inches, over on the [3350] left-hand item at the top. So I selected the depth of 9,448 as being



(Testimony of Kenneth A. Wright.)

as close as could be observed, a point to which they make another observation.

So we have a range of diameters in this well throughout that magnitude, and with that as a basis I have made this exhibit, which is a simulated section of 5½-inch casing, placed thereon a 5½-inch Weatherford scratcher having five-inch wires, and then the outer rim of this particular device is actually the diameters incident in those three places in the well that I have mentioned, and which are so stated on the side at these points. And then you can visualize the actual relationship of the wires to the sleeve or collar at that point in what condition it was in to operate at those particular times and those places in the well during the reciprocation.

So the scratcher in this very well for part of the area would not touch the wall of the well some places. It might do it with one angle and with the wires in one condition, and in the area which is the most critical, that is to say, we drilled that oil well to get this sand down here at 9,460 to 9,474, why, this illustrates as far as we will ever know. We will never get down in the hole to take the look. And you can see it demonstrates the actual position of the wires, the relationship of the wires to the sleeve in that particular section of the hole. [3351]

Q. (By Mr. L. E. Lyon): Now, Mr. Wright, in this Exhibit EL for identification the wires which were in the smallest part of the hole, and that is in that section which is marked "depth, 8,475-8-



(Testimony of Kenneth A. Wright.)

13/16ths," the wires are bent toward the collar beyond a straight line position and beyond a position which would be termed a tangent, are they not?

A. Yes, they are.

Q. Over here in this section of the model which lies between 8 13/16ths and the 14 13/16ths section some of the wires are touching, just touching the wall, the inside wall, of this simulated hole or this metal ring, are they not?

A. That is correct.

Q. And those wires that are just touching indicate approximately the angular relationship of the wires to the collar outside of the well, outside of use, do they not?

A. That is right; the same as they would be before you put them in the well.

Q. Is it a fact that if you used a scratcher, the wires of which were tangent to the supporting collar, that the wires to be effective would have to be longer than where the angle is not a tangent or is less than a tangent, we will say?

A. I don't understand your question, Mr. Lyon.

Q. If you have the wires here which we say indicate in Exhibit EL the position of those wires outside of the well, [3352] if that wire was on a tangent—and I will bend it to a tangent position—for that wire to reach the same wall of the hole, that wire would have to be longer, would it not?

A. That is correct.

Q. As the wires increase and you crowd a multiplicity of such wires into a hole, what is the effect?

(Testimony of Kenneth A. Wright.)

A. As the wires increase?

Q. In length.

A. Well, then they wrap around the body of the sleeve prior to extending out to contact the wall of the hole.

Q. Is there any effect, then, of the wires to ball up one on the other?

A. Well, you are using "ball up"—is a very broad word, Mr. Lyon.

Q. Well, tangle up?

A. The exhibit speaks pretty well for itself, and if they are pretty closely crowded together in that position, if that is "ball up," then, crowded close together is what you are talking about.

Q. Well, as you increase the length of them, why, their tendency to tangle as the scratcher is lowered in the well increases, does it not?

A. That is right; executes that [3353] particular——

\* \* \*

Q. (By Mr. L. E. Lyon): You never have used a scratcher with a tangent wire on it, have you?

A. Is "tangential" meant by you to be a true tangent?

Q. A true tangent.

A. Never intentionally, although in transit the wires are bent some, to some degrees, so you might find one with a couple of wires on it tangent, but it would be because of the handling rather than the actual intention to construct them in that way.

(Testimony of Kenneth A. Wright.)

Q. Now, how are these scratchers handled so that any such bending could occur?

A. Well, the devices, after being completed, are normally—as far as B and W are concerned, we place them in what we call wire bound boxes and cram them in together, as many as we can in a box. So there is no attempt made to protect them or try to maintain this angular relationship of the wire to the sleeve. They are just crammed in the box, and I mean crammed in the box.

The Court: They are designed to withstand rough usage, are they?

The Witness: That is correct, your Honor.

The Court: Do you have any opinion as to the relative efficacy of the true tangent as compared with the non-tangential? Is that what you are after, Mr. Lyon?

Mr. L. E. Lyon: That might be, yes, your [3355] Honor.

The Witness: As far as the effectiveness in the well, an unbelievable range of things will give satisfactory results, your Honor.

The Court: You would not be able to express an opinion as to whether one would be more efficacious than the other?

The Witness: That is correct. We end up with this: We perforate the well and determine what fluid comes from the perforations, and that is what we end up with, as a test for what the scratcher did.

The Court: If it works, it is good, is that it?

The Witness: If we determine that we have oil

(Testimony of Kenneth A. Wright.)

and it is free of water and it is clean and we perforate it and we get pipeline oil and we get clean oil, we say that is fine.

Q. (By Mr. L. E. Lyon): Do the records of the Kelly well show success of operation as measured by the tests, the standards of which you have just stated, Mr. Wright?

A. That is correct.

Q. And do the records of the wells on which your wall-cleaning guides——

A. Correction. Mr. Sweetser made that statement in his deposition, so I am relying upon his statement.

Q. Do the records of the Union Oil Company, of the Rosecrans wells, 38 and 39, show, as you studied those logs, a successful operation? [3356]

\* \* \*

The Witness: Well, I don't remember all these statements in those Union Oil Company records, but the engineer that worked with Union Oil Company at the time gave a deposition and either one or the other or both contains the information that the cementations were successful.

Mr. L. E. Lyon: That is all.

I will offer Exhibit EL, the model the witness just described or demonstrated, in evidence, your Honor. [3357]

\* \* \*

In the United States District Court, Southern  
District of California, Central Division

Civil Action No. 7839-WM

JESSE E. HALL,

Plaintiff,

vs.

KENNETH A. WRIGHT and B & W, INC., a  
California Corporation,

Defendants.

STATEMENT OF FACTS PURSUANT TO  
ORDER FOR PRETRIAL

Pursuant to the pretrial order of the Court, the parties, through their respective counsels, agree to the following facts, in which have been included the documentary Exhibits of the parties as listed upon the attached and made a part hereof.

1. That the plaintiff Hall on April 16, 1941, filed his application Ser. No. 388,891, plaintiff's Exhibit 1.

2. That on March 27, 1944, Hall filed his application Ser. No. 528,183, plaintiff's Exhibit 2. [3259]

3. That on November 6, 1945, Hall filed his application Ser. No. 627,013, as a continuation in part of application Ser. No. 388,891, plaintiff's Exhibit 3.

4. That prior to September 15, 1944, Hall manufactured and sold scratchers of the form shown in Figs. 1 and 2 of application Ser. No. 627,013.

5. That prior to September 15, 1944, a catalog entitled "Weatherford Spring Company," consisting of twelve pages, including cover and back, plaintiff's Exhibit 4, was being distributed to the trade by the plaintiff.

6. That plaintiff's Exhibit 5 is a true copy of an advertisement published in the Oil & Gas Journal issue of April 30, 1942, which includes a cut of the scratcher illustrated on page 7 of Exhibit 4.

7. That defendant Wright knew at the time of the settlement on September 15, 1944, that plaintiff Hall had theretofore put out the said pamphlet Exhibit 4.

8. That plaintiff and defendants prior to September 15, 1944, and thereafter up to the bringing of this action have sold competing scratchers which were generally sold in the same market in the United States and generally compete for the patronage of the same customers.

9. That the defendants did on or about July, 1946, and have at various times thereafter called the attention of some of Hall's prospective customers to the license agreement of [3260] September 15, 1944, and stated that any rights that the plaintiff Hall had were covered by the provisions of said agreement and that in defendants' opinion the plaintiff Hall had no rights under the scratchers shown in Figs. 1 and 2 of application Ser. No. 627,013.

10. That defendants have not issued and have not offered to issue licenses to customers of Hall

who have purchased scratchers in the form shown in Figs. 1 and 2 of application Ser. No. 627,013, or anyone else other than the license granted Hall in the agreement of September 15, 1944; that no express license has been issued to the purchasers of defendants' scratchers and covering the method of use thereof.

11. That defendants have not brought any action for infringement against any of plaintiff's customers.

12. Hall-Wright Interferences. That plaintiff's Exhibit 6 is a true copy of an interference file No. 81,240 declared between an application of plaintiff Hall Ser. No. 388,891, filed April 16, 1941, and an application of defendant Wright Ser. No. 369,389, filed December 10, 1950; that plaintiff's Exhibit 7 is a true copy of the interference file No. 81,599 involving application of plaintiff Hall Ser. No. 528,183 filed March 27, 1944, and defendant Wright's patent 2,338,372 issued January 4, 1944; that plaintiff's Exhibit 8 is a certified copy of the Wright application Ser. No. 369,389 filed December 10, 1940, issued as patent [3261] 2,374,317 dated April 24, 1945; that plaintiff's Exhibit 9 is a certified copy of Wright application Ser. No. 291,027 filed August 19, 1939, issued as patent 2,338,372 dated January 4, 1944.

13. That one, Ben McKinley, since deceased, took it upon himself to bring the plaintiff Hall and the defendant Wright together for the purpose of endeavoring to settle said interference. That as a part

of said McKinley's activities he wrote Hall letters dated 5/30/44, plaintiff's Exhibit 10; 7/2/44, plaintiff's Exhibit 11; 8/16/44, plaintiff's Exhibit 12 and 9/6/44, plaintiff's Exhibit 13; that in reply thereto the plaintiff Hall directed to said McKinley a letter dated 7/13/44, plaintiff's Exhibit 14, and a letter dated 8/29/44, plaintiff's Exhibit 15.

14. The settlement contract dated September 15, 1944, Exhibit D attached to the complaint, was prepared in the office of Wright's patent attorney, W. H. Maxwell. Included among those present were Messrs. J. E. Hall, Sr., K. A. Wright, W. H. Maxwell, B. H. McKinley, J. E. Hall's son, Elmer. Hall was not represented by counsel and there is dispute as to what transpired during the preparation of the settlement agreement.

15. Hall and Wright proceeded under the settlement arrangement of September 15, 1944, without controversy until July, 1946; that in August, 1946, defendant, B & W, Inc., [3262] directed a letter to Shell Oil Company, plaintiff's Exhibit 16; that as a result of the receipt of said letter Shell Oil Company, through its attorney Bernard J. Gratama, directed a letter to plaintiff's counsel under date of August 13, 1946, plaintiff's Exhibit 17; that plaintiff's Exhibit 18 is a true copy of a wire received by plaintiff's counsel from A. M. Houghton, patent counsel for Gulf Oil Company, on April 28, 1947; that plaintiff's Exhibit 19, is a wire sent by B & W, Inc., to Gulf Oil Company dated April 12, 1947; that plaintiff's Exhibit 20 is a letter sent Gulf Oil Com-



pany by plaintiff J. E. Hall dated May 13, 1947; that plaintiff's Exhibit 21 is a true copy of an indemnification given Standard Oil Company of California, on June 13, 1947, by plaintiff's counsel.

16. Defendants admit Hall and his customers, purchasers of Hall scratchers, are privileged to practice the method of Hall as disclosed and claimed in application Ser. No. 528,183, but insist that the scratchers used in such method must conform to the design of the drawings of Hall application Ser. No. 388,891.

17. Plaintiff's counsel in August, 1946, made a trip to Los Angeles and submitted a supplemental agreement framed according to the paper Exhibit E attached to the complaint. Besides this trip in August, 1946, a conference was held in Houston in the latter part of January, 1948, attended by [3263] counsel for plaintiff and defendants and by the parties themselves to work out a settlement of differences.

18. Since August, 1946, Hall has indemnified certain of his customers against the possibility of infringement litigation brought by B & W, Inc., and pertaining to the use of scratchers sold by plaintiff.

19. Bearing upon an adjustment of the settlement agreement of September 15, 1944, the letters scheduled below are stipulated as true copies of the correspondence between the parties and/or their attorneys:

Plaintiff's Exhibit 22—copy of a letter dated August 21, 1946, from plaintiff's counsel to K. A. Wright;

Plaintiff's Exhibit 23—copy of a letter dated September 27, 1946, addressed to J. E. Hall, Sr., by K. A. Wright;

Plaintiff's Exhibit 24—copy of a registered letter dated October 7, 1946, addressed to K. A. Wright by plaintiff's counsel;

Plaintiff's Exhibit 25—copy of a registered letter dated May 13, 1947, addressed to K. A. Wright by plaintiff's counsel;

Plaintiff's Exhibit 26—a two-page letter dated May 14, 1947, addressed to plaintiff Hall by J. Harold Decker;

Plaintiff's Exhibit 27—copy of a letter dated May 19, 1947, addressed to J. Harold Decker by plaintiff's counsel;

Plaintiff's Exhibit 28—a letter dated June 11, 1947, [3264] addressed to plaintiff's counsel by J. Harold Decker;

Plaintiff's Exhibit 29—copy of a letter dated June 18, 1947, addressed to J. Harold Decker by plaintiff's counsel;

Plaintiff's Exhibit 30—copy of a letter dated September 19, 1947, addressed to J. Harold Decker by plaintiff's counsel;

Plaintiff's Exhibit 31—a letter dated September 30, 1947, addressed to plaintiff's counsel by J. Harold Decker;

Plaintiff's Exhibit 32—copy of a letter dated

October 6, 1947, addressed to J. Harold Decker by plaintiff's counsel;

Plaintiff's Exhibit 33—copy of a registered letter dated November 29, 1947, addressed to K. A. Wright by plaintiff's counsel.

20. That plaintiff's Exhibit 34 is the agreement dated September 15, 1944, between plaintiff and defendants (Exhibit D attached to the complaint).

21. That plaintiff's Exhibit 35 is the proposed supplemental agreement (Exhibit E attached to the complaint).

22. That plaintiff's Exhibit 36 is the assignment (Exhibit C attached to the complaint).

23. That plaintiff's Exhibit 37 is Wright patent 2,338,372 (Exhibit A attached to the complaint).

24. That plaintiff's Exhibit 38 is Wright patent 2,374,317 (Exhibit B attached to the complaint).

25. That plaintiff's Exhibit 39 is Wright patent 2,392,352. [3265]

26. That defendants' Exhibit A is an advertisement of plaintiff appearing in the Oil Weekly of July 7, 1941.

27. That defendants' Exhibit B is an advertisement of plaintiff appearing in the Oil & Gas Journal of September 11, 1941.

28. That defendants' Exhibit C is a mimeographed copy of a paper entitled "Oil Well Cementing, etc.," by P. H. Jones and Denis Berdine, sub-

sequently published in the Petroleum World of June, 1940, Volume 37.

29. That defendants' Exhibit D is plaintiff Hall's statement of royalties due for the last quarter of 1944 and accompanying check for royalties.

30. That defendants' Exhibit E is plaintiff Hall's statement of royalties due for the first quarter of 1945 and accompanying check for royalties.

31. That defendants' Exhibit F is plaintiff Hall's statement of royalties due for the first quarter of 1946 and accompanying check for royalties.

32. That defendants' Exhibit G is plaintiff Hall's statement of royalties due for the second quarter of 1946 and accompanying check for royalties.

Dated: This 15th day of May, 1948.

/s/ THOS. E. SCOFIELD,

/s/ PHIL SUBKOW,

Attorneys for Plaintiff.

/s/ LYON & LYON,

/s/ R. E. CAUGHEY,

Attorneys for [3266] Defendants.

\* \* \*

WILLIAM A. DOBLE

called as a witness by defendants, being first sworn, was examined and testified as follows:

The Clerk: Will you state your name, please?

The Witness: William A. Doble.

Direct Examination

By Mr. L. E. Lyon:

Q. What is your occupation, Mr. Doble?

A. I am a professional engineer, registered professional engineer in the State of California.

Q. You are engaged in a business. What is that business? [3440]

A. I am engaged in a consulting engineering business relating primarily to patent matters, patent cases, patent investigations and the like.

Q. Are you a registered patent attorney, registered to practice before the United States Patent Office?

A. Yes, sir.

Q. Have you at any time during your professional activity actually prepared and prosecuted patent applications before the United States Patent Office?

A. Yes, sir; I have.

Q. Do you do any of that work now?

A. No, I haven't on my own account practiced before the Patent Office for some—oh, 12 to 14 years, I would judge.

Q. How long have you been engaged in this engineering practice of advising prospective patentees, Mr. Doble?

A. Approximately 30 years, taking out the time

(Testimony of William A. Doble.)

I spent in the second World War serving with the Government.

Q. You say you are a registered engineer, registered to practice in the State of California?

A. Yes, sir.

Q. You received your training in engineering where? A. Stanford University.

Q. Have you at any time acted in the capacity of an expert witness in patent matters before the courts? [3441] A. Yes, sir.

Q. For how many years have you been engaged in that activity?

A. Oh, I would say between 25 and 30 years.

Q. You have testified in the courts in California, have you? A. Yes, sir.

Q. Both the Northern and Southern Districts?

A. Yes, sir.

Q. And in other states in the United States?

A. Yes, sir.

Q. In what states?

A. The State of Washington, the State of Ohio, and the State of Oklahoma.

Q. Arizona? A. And the State of Arizona.

Q. Oregon? A. And the State of Oregon.

Q. All of these in different patent cases?

A. Yes, sir.

Q. Involving what type of patents, Mr. Doble?

A. Generally patents related to mechanical devices, a great many different natures.

Q. Has the Circuit Court of Appeals of the

(Testimony of William A. Doble.)

Ninth Circuit at any time commented upon your activity as a [3442] patent expert?

A. Yes, sir.

Q. In what cases?

A. In the case of International Harvester Company v. Killefer Manufacturing Co.; and in the case of the Killefer Manufacturing Co. v. Dinuba Associates, Ltd.

Q. Do you have the citations to those cases?

A. Yes, sir. I have the citation in the Patent Quarterly, volume 19, pages 9-13; and there appears on page 11 the following quotation:

“The only expert witness who testified at the hearing before the Special Master was W. A. Doble, Jr., called on behalf of defendants as mechanical engineer and qualified as such expert.”

At that time I operated under the name of William A. Doble, Jr. Since that time my father has passed away and I have dropped the “Junior.”

That quotation is found in the case of International Harvester Co. v. Killefer Manufacturing Co.

Then, again, in the case of Killefer Manufacturing Co. v. Dinuba Associates there appears—the citation is found in the Patent Quarterly, volume 19, pages 124 through 129, and the following quotation is found on page 146;

“These were segregated into three types by the witness William A. Doble, Jr., who testified [3443] for the defendant. We quote from his testimony the following classification which seems to be an accurate description of the various types.” [3444]

(Testimony of William A. Doble.)

Q. (By Mr. L. E. Lyon): In what cases have you recently testified in the Southern District of California, in the federal court, do you recall, Mr. Doble?

A. Yes. I just recently testified in the case of Niagara Blower Company, a corporation, versus Refrigeration Engineering Corporation, and that case was heard by Judge Ernest A. Tolin.

I also testified in the case of the Huck Manufacturing Company versus the Townsend Company, and that case was likewise tried before Judge Ernest A. Tolin.

Q. You recently testified in the Northern District of California in a case; what was that case?

A. That case was the case of Charles H. Martin versus the Be-Ge Manufacturing Company of Gilroy, and that case was tried before Judge Lemmon in San Francisco.

Q. When?

A. The trial was started December 15th.

Q. That was during a recess in this trial, was it not?

A. Yes, sir.

Q. Who were the attorneys that tried that case?

A. The attorney for the defendant, whom I worked with, was primarily Mr. Percy Webster. He was a directing attorney, but due to certain conditions in his family he was unable to attend the trial, so the firm of Flehr and Swain tried the case. An attorney by the name of John Swain was the actual [3445] attorney that tried the case.



(Testimony of William A. Doble.)

Q. All right. Now, have you made a study of the K. A. Wright patents, No. 2,338,372, Exhibit 37; No. 2,374,317, Exhibit 38, and the K. A. Wright Patent No. 2,392,352, Exhibit 39?

A. Yes, sir.

Q. In that study, have you considered the prosecution of the applications which resulted in the grant of those patents, as of when they were pending before the United States Patent Office?

A. Yes, sir.

Q. Have you conducted or witnessed any tests of apparatus as shown in the '317 patent, Exhibit No. 38?

A. Yes, sir, I have directed the testing of such an apparatus.

Q. Have you in those tests made any comparative tests of the operation of the plaintiff's structure, the Weatherford scratchers, as those scratchers are exemplified by a scratcher like that included in Exhibit EL, Mr. Doble?

A. Yes, sir, I have.

Q. I will hand you a scratcher which I have marked for identification as Exhibit EJ and ask you if you have tested any scratchers of the plaintiff like Exhibit EJ?

A. Yes, sir, I have.

Q. Now, in testing the scratchers like Exhibit EJ, did [3446] you make any change in the scratcher?

A. Yes, sir.

Q. What change was that?

A. It was necessary to shorten the length of the wire bristles to operate in a 6 $\frac{7}{8}$ -inch diameter cylinder, and to that extent the Hall type or

(Testimony of William A. Doble.)

Weatherford type of scratcher that I tested was different from Exhibit EJ.

Q. The scratcher which you actually tested, of the Weatherford Company, like Exhibit EJ, was placed in evidence before, in the public-use proceedings, was it not?           A. Yes, sir.

Q. Was that identical with Exhibit EJ except for the length of the wires?

A. Yes, sir, allowing for the slight differences there are in the manufacture of scratchers of this nature. No two are really identical. [3447]

\* \* \*

The Court: Well, the foundation is laid and the objection is overruled. The exhibit is received in evidence.

The Clerk: Exhibit EJ. [3450]

\* \* \*

The Witness: —19.

The Court: Do you wish to start with 11?

The Witness: I would prefer to start with Exhibit NNNN-11.

Mr. L. E. Lyon: Let us see if that is the same one, Mr. Doble.

The Witness: Yes, that is the same as his Honor has.

A. Illustrated or depicted in Exhibit NNNN-11 is a testing machine built for the purpose of testing the operation of the several different types of scratchers so as to determine their operating char-

(Testimony of William A. Doble.)

acteristics; and the type of machine which is shown in Exhibit NNNN-11 follows the recommendation made in the Hall file wrapper 627,031.

Q. 013?           A. 013.

Q. Exhibit what?

A. Exhibit K. And in that file wrapper I will refer to page 8, lines 11 to 19.

Q. In this case, Mr. Doble—pardon me—I believe you are reading from the exhibit. You might hand that one—[3453] and this is our copy—so that you will follow the same procedure all the way through.

The Court: These photographs have only been marked for identification, is that correct?

Mr. L. E. Lyon: Yes, your Honor; I believe that is correct.

The Court: Is there any objection on the part of the plaintiff to the court making use of them?

Mr. Scofield: No, sir.

The Court: Very well. I have before me Exhibit K open at page 8.

The Witness: Yes, your Honor. And if you will read from line 11 through line 16—pardon me—from line 26 on page 8, through line 11 on page 9?

The Court: Line 26, beginning with “The unusual mechanical action”?

Mr. L. E. Lyon: Yes, sir.

The Witness: Yes, your Honor. Shall I read that in the record, Mr. Lyon?

The Court: It might make it more readable.

The Witness: Thank you.

(Testimony of William A. Doble.)

A. "The unusual mechanical action of the abrading wires has been determined by mounting the scratcher on a piece of pipe and reciprocating it within a pipe of larger diameter. As the scratcher is being [3454] run in a dummy oil well of this sort it has been noted that the whiskers are pointed upwardly in the same direction as the scratcher is lowered into the hole, and as the direction of the scratcher is reversed the free ends of the wires hold their position against the inside of the pipe or well bore as they are rotated upon their coiled springs as fulcrums. As the wires rotate in arcs passing from the relative vertical to a horizontal position with reversal of the movement of the pipe, the scratcher sleeve or collar is caused to rotate upon the pipe, relieving somewhat the tension in the wires."

Then I will refer to Plaintiff's Exhibit 69, which is the file wrapper, Hall file wrapper serial No. 55619. [3455]

\* \* \*

The Witness: Yes, I would like to read it, your Honor, if I may.

The Court: You may.

A. "As the scratcher is being run in a dummy oil well of this sort——"

Excuse me. I got the wrong line. Strike.

"The unusual mechanical action of the abrading wires has been determined by mounting the scratcher on a piece of pipe and reciprocating it within a pipe of larger diameter. As the scratcher is being run

(Testimony of William A. Doble.)

in a dummy oil well of this sort, it has been noted that the whiskers are pointed upwardly in the same direction as the scratcher is lowered into the hole, and as the direction of the scratcher is reversed the free ends of the wires hold their position against the inside of the pipe or well bore as they are rotated upon their coiled springs as fulcrums. As the wires rotate in arcs passing from the relative vertical to a horizontal position with reversal of the movement of the pipe, the scratcher sleeve or collar is caused to rotate upon the pipe, relieving somewhat the tension in the wires. This eliminates the dead thrust action longitudinally of the wires which is present when the sleeve is fixed on the casing and the wires are [3456] rigidly attached to the sleeve."

Mr. Scofield: Is that "dead thrust"? Did you say "dead thrust"?

The Witness: Yes, I did. I will read that. "This eliminates the dead thrust action."

Then, next, I would like to refer to Plaintiff's Exhibit 4 and to page 8 of Plaintiff's Exhibit 4, reading——

Mr. L. E. Lyon: Just a moment. [3457]

The Court: Plaintiff's Exhibit 4 is a catalog of the Weatherford Spring Company.

The Witness: Yes, your Honor.

The Court: Very well.

The Witness: And page 8, reading the left-hand column under the title, "Weatherford's Reversible Scratcher Crawls for Complete Cleaning Job," and I will read that whole paragraph entitled "Fig. 5":

(Testimony of William A. Doble.)

“A Weatherford Scratcher on casing, that is centered by Spiral Centralizers, has conformed to the pattern of the well and also has crawled around its entire surface as the casing was reciprocated to remove jelled mud from a key-seat and mud cake growth from out of crevices and bit rout-outs. In order to observe this crawling action and also the reversing action of the Weatherford Scratcher, the operator need only shove one into a joint of surface pipe and work it back and forth with the strength of the hands.”

Those statements by the plaintiff, that the scratcher may be tested in a pipe of larger diameter than the casing, were adopted by defendant in making the machine, testing machine, as illustrated in Defendants' Exhibit NNNN-11. The machine as shown in this exhibit includes a stand——

Mr. L. E. Lyon: Now, pardon me, Mr. Doble, but does [3458] the court have Exhibit NNNN-11 before it?

Wait until the court has Exhibit NNNN-11 before it, please.

The Witness: Yes, sir, it does.

The Court: That is the photograph?

The Witness: That is the photograph, your Honor.

Briefly, that structure, photograph, Exhibit NNNN-11, includes a three-legged stand having a cylindrical collar affixed at its upper end, upon which cylindrical pipe such as shown in this Exhibit

(Testimony of William A. Doble.)

NNNN-11, and there indicated by the numeral 24, is supported on the flange by a circular flange which is formed integral with the pipe section 24.

In order to eliminate any tendency of operating the scratcher through the pipe or cylinder 24 which might affect its rotating action, a rod, which in this case is a square rod, and I will describe it more fully later on, as I wish now merely to give an overall picture of the apparatus, was provided with sliding bearings through sufficient portions of the triangular frame so that that rod could be reciprocated up and down without influence of the operator in any way affecting the rotating characteristic of the scratcher under test.

The mounting on that square rod is a simulated casing. A simulated casing is provided with stops at the top and bottom, as I will point out later, and between those stops is secured or fastened one of the scratchers which is to be [3459] tested.

The scratcher is free to rotate on the simulated casing. It is free to travel between the two stops.

By means of the crank handle which extends to the right of the tripod or three-legged frame—that is an operating lever. So, by means of raising the lever, the square rod is caused to move downwardly to carry the scraper or scratcher through the cylinder and in that way to observe the action of that scratcher during its travel through the casing.

And then, by reversing the actuation of the operating handle, reversal of the scratcher can be obtained and the scratcher moved to the upper end of the

(Testimony of William A. Doble.)

cylinder. That operation can be repeated as many times as desired.

In relation to the actual construction of the test frame, I call attention to Defendants' Exhibit NNNN-12.

Mr. L. E. Lyon: Wait a minute, now. Pardon me for just one moment, please, Mr. Doble. You are using Exhibit NNNN-11. Thank you.

Pardon me, your Honor.

The Witness: That is it. I am now referring to Defendants' Exhibit NNNN-12, and, as your Honor will observe, the frame here is stripped and does not contain the cylinder with its flange, nor does it contain the simulated casing nor the scratcher mounted on the simulated casing.

In this figure it will be observed that there [3460] are certain numbers which have been placed on the photograph, representing the several parts of the structure. For example, the three legs are designated by the numerals 1, 2 and 3. The frame is provided with the ring 4 to which the upper ends of the three legs are securely welded.

Below the ring 4, the frame is provided with a brace structure 5 and also with a brace structure 6.

The two brace structures, 5 and 6, are provided with bearings 7, which bearings 7 are provided with square holes through which the square operating shaft 8 is free to slide and yet is prevented from rotation.

Pivottally connected to the lower end of the square operating rod, at 9, are a pair of actuating links 10.



(Testimony of William A. Doble.)

The links 10 extend upwardly and are joined to the inner end of the crank lever 11.

In turning the crank, lever 11 is pivoted or joined upon the front leg 1 of the test frame by the bearing 13.

As shown in this view, there is a pin 14 which extends through the front leg 1 and against which the forward end of the crank arm engages. That pin is for the purpose of holding the square operating rod or reciprocating rod in its upper position and preventing movement of the crank handle until that pin 14 has been removed.

The very forward end of the crank arm is provided with an operating handle 12 for convenience of the operator in [3461] causing the reciprocating rod to move upwardly or downwardly with relation to the frame.

Next it will be observed that positioned on the square reciprocating rod are bearing supports or bearings 15 and 16. Each of these bearing supports is provided with a Timken bearing.

Does your Honor have any question with regard to the structure of that portion of the machine which I have now described?

The Court: How do you operate arm 12? Does this turn?

The Witness: No. That swings——

The Court: Well, does it go up and down?

The Witness: It is like pumping an old well, a water well.

The Court: I was wondering why it is con-

(Testimony of William A. Doble.)

structed in such manner as that. Is that to give you additional leverage?

The Witness: Yes, and to make it at a more convenient angle for the operator to actuate, and, of course, before that handle can be operated, the pin 14 must be removed.

The Court: I think I understand it.

The Witness: Then, if your Honor will turn to Defendants' Exhibit NNNN-13, we find the frame of a test machine in the same condition and in the same relationship as shown in the previous exhibit, Defendants' Exhibit NNNN-12. However, there has been added to the upper end of the reciprocating square rod 8 a simulated well casing 18. [3462]

And in this exhibit, mounted on the simulated casing 18 are stop rings 20 and 21. The stop ring 20 is the lower of the two rings, and the stop ring 21 is positioned adjacent the upper end of the simulated casing. Those stop rings are provided with Allen setscrews for locking the stop rings in any adjusted position or to provide for their removal from the simulated casing 18 in a convenient manner.

I would also call attention at this time to the lockscrew 19 which projects downwardly through the upper bearing bracket 15 and is used for engaging the upper edge of the simulated casing 18 so as to lock the simulated casing 18 against rotation with relation to the square reciprocating rod 8.

Now, I would next turn to Defendants' Exhibit NNNN-15, and this exhibit is similar to the other

(Testimony of William A. Doble.)

exhibits which I have referred to, with the exception that only the upper portion of the test frame has been illustrated and added, to the other exhibits which I have described, the cylinder 24.

In connection with Exhibit NNNN-15, I would also like to refer to Defendants' Exhibit NNNN-11, which shows the entire test machine and illustrates the same parts which have been added to the test frame as are shown in Exhibit NNNN-15.

So we find added to the test frame flange 23 of the cylinder 24.

In Defendants' Exhibit NNNN-11 the numerals appear on [3463] the photograph, whereas, in Defendants' Exhibit NNNN-15, the numerals are not indicated on the photograph.

Exhibit NNNN is an enlargement and shows more clearly the upper portion of the test frame as it appears in Exhibit NNNN-11.

The Court: What was that last?

The Witness: NNNN-11 (indicating exhibit).

The Court: Preceding that?

The Witness: NNNN-15 (indicating exhibit).

The flange of the cylinder 24, cast flange 23 of cylinder 24, is removably secured upon the ring 4 of the test stand by means of thumbscrews 25, so that the cylinder may be readily mounted upon or removed from the test frame.

I now call attention to a scratcher—I believe I have indicated the other scratcher by the numeral 22—which is mounted on the simulated casing 18

(Testimony of William A. Doble.)

and is confined thereon by the lower collar, stop collar 20, and the upper stop collar 21.

The scratcher 22 is free to rotate on the simulated casing 18 as well as slide between the two stops 20 and 21.

Now, the machine as it was set up and operated is ready to demonstrate the operation of the scratcher 22 in its entrance into the cylinder, its progress through the cylinder down to the bottom of the cylinder. It was not run through the bottom, but stopped adjacent the bottom of the cylinder. [3464]

The Court: What is the length of that cylinder?

The Witness: It is about a foot and a half, your Honor, as I remember it.

The Court: Is there any particular reason for that particular length?

The Witness: Just convenience of operation, your Honor. It would not make any difference if it were a hundred feet. The main operation takes place, that we are interested in, at the reversal points, where you start upwardly from the bottom stroke or downwardly from the upper end of the top stroke.

The Court: And that reversal point is determined by the lugs on the casing, the station of the lugs on the casing?

The Witness: Yes, your Honor, plus the amount you operate the handle. You operate the handle to move the scratcher downwardly to the bottom of the cylinder and then you reverse the motion of the

(Testimony of William A. Doble.)

handle, so as to move the scratcher upwardly through the cylinder to the upper end of the cylinder.

The Court: Well, I wasn't referring to this particular device. I was referring to its use in a well.

The Witness: Yes.

The Court: You simulated that condition, I take it by these two rings here, so that when the scratcher is going up [3465] or down within the space permitted between the two rings—they are numbered——

The Witness: 20 and 21, your Honor.

The Court: ——20 and 21, then the reversal takes place, is that it?

The Witness: That isn't quite so. For example supposing we start with Exhibit NNNN-11. Now, we want to pass the scratcher 22 down through the cylinder. We cause the operating handle to move, which in turn causes the reciprocating rod 8 to move downwardly. The first thing that will happen is that the wires of the scratcher 22 will engage the upper surface of the cylinder, and that is shown in Exhibit AT. [3466]

The Court: When the wires of the scratcher engage the rim of the pipe at the well, the rim of the casing, Figure NNNN-15, then I take it the wires bend upward?

The Witness: Not when they first engage it, your Honor.

The Court: When pressure is applied they will bend upward, will they not?

The Witness: That is correct, then, your Honor.

(Testimony of William A. Doble.)

First of all the wires will engage the upper surface of the flange of the cylinder. The scratcher will stay stationary during the movement of the simulated cylinder through it until the upper stop 21 engages the upper surface of the sleeve of the scratcher, and then force can be applied to the scratcher to force it down into the cylinder; and at that time the wires of the scratcher will flex upwardly and angularly forwardly. They resist moving into the bore of the casing 24.

The Court: I take it at a certain point on the descent they take a position and retain that position?

The Witness: Yes, your Honor. And then when the operating shaft moves upwardly, the scratcher will remain stationary until the upper stop ring engages the bottom of the scratcher, the scratcher body, and force the scratcher body upwardly. The wires will remain substantially stationary until they pass their center of flexure, and then rather [3467] easily the wires will progress the casing, that is, the sleeve of the scratcher around on the simulated casing.

Mr. L. E. Lyon: I think, Mr. Doble, you had better have the first part of that last statement of yours read, because I think you said "upper" when you meant "lower." I am referring to the rings.

The Witness: Would you read that, please, Mr. Reporter?

Mr. L. E. Lyon: Where you started to move the

(Testimony of William A. Doble.)

scratcher up, you said the upper ring engaged the scratcher.

The Witness: Maybe we can have the testimony corrected to read, "that when the lower stop ring 20 engages the bottom of the sleeve portion of the scratcher and the upward movement of the square operating rod continues, then the scratcher will move upwardly."

Q. There is, is there not, Mr. Doble, in this as well as in the operation of these scratchers in a well a point where the casing will move through the scratcher and the scratcher will stay stationary?

A. Yes, sir; that is correct.

Q. And that is on both points of reversal?

A. Yes, sir.

Q. And that is what you are pointing out now?

A. Yes, sir.

The Court: Then the distance between the two lugs in a real oil well, the distance between those two rings on [3468] your model here, determines when they will bend?

The Witness: Yes, your Honor, in relation to the start of the upward movement or downward movement of the pipe.

The Court: Yes.

The Witness: Yes, the distance left between.

The Court: I would say it this way: determines how long the scratcher will remain at one position?

The Witness: Yes, sir; that is correct.

The Court: Is there any reason to assign any particular distance?



(Testimony of William A. Doble.)

The Witness: Yes, your Honor, there is. That distance is determined by the amount of length necessary in order to lift the casing so that the slips up on the rotary table can be freed. They have to hold the casing in order to put a new length of casing, attach new lengths of casing to that which has already gone into the well. So in order to do that, they have to relieve the casing that has already gone down into the well from the elevators of the tower, and then the casing would be free to drop to the bottom of the well if something did not hold it there; and to provide that it is held, the rotary table is provided with slips which hold it.

But after the next length of casing has been added to that which is already extending down into the well, then that string of casing must be lifted a short distance to lift the [3469] tapered wedges, to free the tapered wedges so they can be pulled out and then the entire string lowered down for the length of that additional casing, and then the operation is repeated.

The Court: So that stationing of the lugs on the casing must accommodate that operation, is that it?

The Witness: That is the only purpose, your Honor, except to give freedom of rotation. If it were not for that space required for releasing the slips, the two stop rings could be positioned closely adjacent each side of the scratcher [3470] sleeve.



(Testimony of William A. Doble.)

A. I am referring now to Defendants' Exhibit NNNN-15, and I will call attention to the scratcher which is mounted upon the simulated cylinder 18. The scratcher in this case is a wall-cleaning guide of the Jones type such as shown in Figure 26 of Defendants' Exhibit X.

Q. And like the models on Exhibit EM-1 over there, the pipe, Mr. Doble?

A. Like them but—yes, I guess they are very similar to the scratchers on Exhibit——

Q. EM-1 is the pipe?           A. ——EM-1.

Q. And the two scratchers that I referred to that are on that exhibit are Exhibits IIII and EC, respectively?           A. That is correct, sir.

That scratcher which I have just referred to was run into the cylinder, down to the bottom of this cylinder, then moved up to the upper end of the cylinder without permitting the wires to leave the cylinder. That operation was carried [3471] on for several reciprocations, that is, up and down movement of the scratcher in the cylinder. In doing so the action of the wires during their travel through the cylinder either upwardly or downwardly was observed; also the action of the wires at the lower reversal point as well as at the upper reversal point, and at each of the reversal points it was observed that the sleeve or body portion of the scratcher rotated a small amount. And I would——

Q. Now, Mr. Doble, right there—pardon me for interrupting you—was a tracing made or a pattern

(Testimony of William A. Doble.)

made of the path made by the wires which you have just now described?

A. Yes, Mr. Lyon, at a later date, but not at the time that the tests which I am referring to were run.

Q. You say the pattern was made at a later date?

A. Yes, sir; and with a different cylinder than is shown in Defendants' Exhibit NNNN-15.

Q. Just so this might be correlated, let us take up the second test that was made, then, if there was a second, or a third, whichever it was of this Jones and Berdine type of scratcher and its pattern, if one was made, so we will get them all together.

A. In order—may I finish my last?

Q. Yes, you may. Pardon me.

A. I had not quite finished when you interrupted me. [3472]

My observation of the fingers during the travel down through the cylinder or upwardly through the cylinder was that the wires traveled in a straight path between the reversal points; that is, the path was, as near as one could observe in the structure set up as in Defendants' Exhibit NNNN-15, the wires traveled straight down to the stopping point in the cylinder, then during the reversal the sleeve or body portion of the scratcher progressed around the simulated casing, and from that point the wires traveled straight upwardly within the bore of the cylinder until the upper reversal point was reached.

(Testimony of William A. Doble.)

Now in order to demonstrate that I directed that a cylinder be made which could be separated into two halves. Such a cylinder was made of steel and the cylinder 24, as shown in Defendants' Exhibit NNNN-15, was removed from the machine and the new cylinder which was made in two halves, the internal bore of which was ground so it was absolutely smooth and that bore was coated with showcase or show card paint, which is black and is very soft, and that cylinder was mounted on the test stand and a scratcher similar to the scratcher which is shown in Defendants' Exhibit NNNN-15, was placed in the machine in the same manner as shown in this exhibit and was progressed down into the cylinder, and then up to the upper extremity of the cylinder, and then down into the cylinder and then up and out of the cylinder, making [3473] two complete cycles of operation—two downstrokes and two upstrokes—before withdrawing the scratcher from the cylinder.

And in that respect I will refer now to Defendants' Exhibit NNNN-27.

Does your Honor have a copy of it? Is it in your book?

The Court: It is.

The Witness: Thank you.

The Court: It has just been inserted.

A. Defendants' Exhibit NNNN-27 is a photograph illustrating one-half of the cylinder structure like the cylinder 24, and in the photograph may be observed the upper horizontal flange, the down-

(Testimony of William A. Doble.)

wardly extending tube or casing, together with side flanges which have a series of holes at the side of the bore portion of the cylinder; and those holes were for the purpose of bolting the two halves together, with taper pin holes provided so that the two halves could be brought into exact register.

As I say, the inner surface of the cylinder, Defendants' Exhibit NNNN-27, was coated with a show card paint on the inner surface.

As before, the scratcher was moved down to the lower end of the cylinder, up to the approximately upper end of the cylinder, down to the bottom of the cylinder again, and then up and out. We could have continued making more [3474] strokes but I was afraid to do so would only confuse the number of lines which the free ends of the wires scribed by scratching off the black paint from the metal surface of the cylinder. [3475]

The cylinder was taken apart and was photographed, and photograph Defendants' Exhibit NNNN-27 is one of the photographs produced of that test.

And you will notice on the upper flange, right-hand flange, there is a letter "J." I placed that on the flange of the half so that I could identify the half-cylinder as that cylinder in which the wall-cleaning guide of the Jones type was operated.

Q. Now, Mr. Doble, what is the significance of any of the saw teeth at the bottom of Exhibit NNNN-27, scribed lines?

A. It indicates or illustrates the rotation of the

(Testimony of William A. Doble.)

sleeve portion of the scratcher with relation to the simulated casing during the reversal point at the lower end of the stroke of the scratcher, into the cylinder.

Q. How does it so illustrate that rotation?

A. By the manner in which the free ends of the wires have scribed a new line which starts from the lower end of the vertical line and swings to the left and then progresses upwardly to the upper end of the cylinder in again an approximately straight line.

Q. What is the significance, if any, of the distance between the two lines that you have just described?

A. Those indicate the amounts of rotation of the sleeve of the scratcher body. [3476]

Q. Now, how, Mr. Doble, in your opinion, does the tracing of Exhibit NNNN-27 compare, if at all, with Figure 27 of the Jones and Berdine Exhibit X report?

A. They are strikingly similiar.

Q. Will you just point out what you mean by "strikingly similiar," and I will place the Jones and Berdine report before you? Where is Exhibit X and where is the Jones and Berdine report?

Under Figure 27 of Jones and Berdine, I believe there is an enlargement of a fragment of that photograph, too. What was that enlargement?

Well, just use that now, Mr. Doble.

A. I have before me Defendants' Exhibit X, which is a copy or is the Jones report, and I have

(Testimony of William A. Doble.)

turned to Figure 27 of Defendants' Exhibit X and will call attention to the cylinder, cast from the cylinder, to which the letter "A" by means of a lead line is directed. And it will be observed in Figure 27 the up and down striations formed in the cast billet, which correspond very, very closely to the up and down scribed lines in Defendants' Exhibit NNNN-27.

Also, at the lower end of the cast billet, as illustrated in Figure 27, there are progressions or diversions of the serrations, indicating a rotation of the scratcher collar about the simulated casing in the well bore.

Mr. L. E. Lyon: Mr. Doble, pardon me, I do not like to [3477] interrupt you, but if I may state, I see that Exhibit J in the Patent Office, which is a photographic reproduction of Figure 27 of Exhibit X and which was marked by Mr. Barkis during the taking of his deposition which has been copied into the record, was not offered and marked, and which is a photographic reproduction of the figure you are referring to, and I would like to ask that that photograph be marked Exhibit NNNN-28.

The Court: It will be so marked.

(The photograph referred to was marked Defendants' Exhibit NNNN-28 for identification.)

Mr. Scofield: No objection.

The Witness As I was pointing out, the jagged or offset lines as they appear at the bottom end of

(Testimony of William A. Doble.)

Figure 27 of Defendants' Exhibit X very closely correspond to the tracing made by the ends of the wires in Exhibit NNNN-27 either at the lower end or at the upper end of the stroke, where reversal took place, in each case indicating clearly there was rotation of the scratcher collar or body portion with relation to either the well casing or simulated well casing.

Q. (By Mr. L. E. Lyon): All right. Now, I interrupted you to bring you back to this particular exhibit, Figure 27 in your previous answer of the description of the tests that you made. Will you go back to where I interrupted you, Mr. [3478] Doble?

A. Yes, sir.

After the tests were run on the structure as set up in Defendants' Exhibit NNNN-15, the scratcher 22 was removed, and a second scratcher, or a different scratcher, was mounted upon the simulated casing.

Q. You are referring back now to the first tests that you ran?

A. Yes, Mr. Lyon.

Q. And let us get them named. Those were the tests that were run in Mr. Wright's back yard, were they not?

A. Yes, sir, on September 27, 1952.

Q. All right.

A. I will turn next to Defendants' Exhibit NNNN-19. In this exhibit there has been placed on the simulated casing a scratcher of the wall-cleaning guide. The wall-cleaning guide in this setup was mounted in the same manner as was the wall-



(Testimony of William A. Doble.)

cleaning guide of the Jones type of Defendants' Exhibit NNNN-15.

Q. Now, Mr. Doble, you used the wording "wall-cleaning guide." You differentiate between the Jones scratcher and the wall-cleaning guide in what respect?

A. Only in the manner in which the outer ends of the wires are bent.

Q. And in the wall-cleaning guide they are bent in [3479] which direction?

A. The ends of the wall-cleaning guide, as shown in Exhibit NNNN-19, the extreme ends of the wires, that is, the free ends of the wires, are bent upwardly, curved upwardly; whereas, in the wall-cleaning guide of the Jones type shown in Defendants Exhibit NNNN-15, the wires extend out and their free ends are not bent upwardly.

Q. Which way are they bent, sidewise?

A. They are bent sidewise.

Q. Proceed.

A. The scratcher as mounted on Defendants' Exhibit NNNN-19 was progressed through the cylinder for a number of strokes. The operation of the wires was observed.

The rotation of the body portion of the scratcher was observed, the section of the wires scratching the cylinder, and their travel up and down the cylinder and at the reversal points was observed.

And then the scratcher was removed from the simulated casing in the manner previously described.



(Testimony of William A. Doble.)

In this operation it was observed that the wires operated exactly in the same way as they did when the scratcher shown in Defendants' Exhibit NNNN-15 operated; namely, during the downstroke the free ends of the wires scratched a straight line down the internal bore of the cylinder; at the reversal point the wires stood still during [3480] the initial movement of the scratcher body upwardly; rotation of the scratcher body or collar was observed during the reversal, and then the wires progressed upwardly in a substantially straight line to the upper reversal point, at which time, when the upper reversal took place, there was an additional forward movement or rotation of the scratcher body around the simulated well casing.

I might say that the scratcher body always rotated in the same direction.

Q. Mr. Doble, is there a mechanical principle which governs this rotation?

A. Yes, sir, there is.

Q. Will you just explain that, using what exhibits or what devices that you want to explain precisely the mechanical principle that governs this rotation of these scratchers in these operations?

A. Well, I have been trying to visualize how I could best explain that, and in order to explain it to myself I made a little rough sketch.

Q. All right.

A. I have it here. In fact, I drew it this morning. Would you care to have it?

(Testimony of William A. Doble.)

Mr. L. E. Lyon: I would like to have it marked for identification, if you are going to use it, Mr. Doble, as the defendants' exhibit next in order. [3481]

The Court: It will be so marked.

Mr. R. F. Lyon: GD.

Mr. L. E. Lyon: GD.

(The sketch referred to was marked Defendants' Exhibit GD for identification.)

Q. (By Mr. L. E. Lyon): All right. You have marked it, and we will get the clerk to mark it later.

A. I have marked it in pencil.

Mr. Scofield: Could I take a look at it?

Mr. L. E. Lyon: Would you like to look at it?

Mr. Scofield: Yes.

Mr. L. E. Lyon: Pardon me.

Q. Do you want that other model?

A. Not yet.

Q. Ok.

A. I have before me Defendants' Exhibit GD. The exhibit is a sketch which I have made, which includes a circle which I will mark with the letter "a," small "a"—all my letters will be small—which represents, or which I have drawn to represent, the outer peripheral surface of a scratcher such as the wall-cleaning guide.

I have drawn a wire whisker or finger, I will designate with the letter "b." That finger, I have drawn it only as extending a short distance around the circle "a" to indicate that the finger or wire

(Testimony of William A. Doble.)

“b” does extend around the surface of [3482] the casing body.

Then, at the point “c,” the wire finger leaves the periphery of the circle “a” and extends outwardly along a substantial radial line.

Maybe I better indicate the radial line of the finger. (Witness marks on exhibit.) And I will draw the radial line with broken dashes. And I have purposely drawn that finger, at least I have tried to draw it, as a true radius along the line which I will now designate “d.” [3483]

Mr. Scofield: Is it a dotted line?

A. It is a broken line.

Mr. Scofield: Is that d?

A. That is d, Mr. Scofield.

I have also drawn a wire finger which I will now designate by the letter e and the wire finger which I have designated with the letter e I have drawn in ink, that is, in blue ink, it appears black here but it is blue or black, which extends from the point at which the radius of finger b leaves the circle a and extends up to the end of the finger b at a point which I will mark f. Now I have drawn in red a parallelogram of forces which is used in mechanics to break up any force which is applied in a diagonal direction to its resultant forces.

Now, we will assume that there is a force g which I have indicated by a small red arrow pressing against the very end portion of the finger b, and endeavoring to push the finger toward the center of the circle a.

(Testimony of William A. Doble.)

That force g will then be resolved into two forces, one force which I will designate by the letter h and the other force which I will designate by the letter i.

Now, the force h is tending to force the structure toward the center of the circle a; whereas the force i is tangent to the circle a at c and is the force which causes or tends to cause rotation of the collar sleeve about the [3484] casing.

Now, if we took finger e or wire e and extended it from the point c to the point f exactly the same diagram of forces would apply, that is if you applied a force g now to the wire e instead of the wire b, the resultant forces would be identical to the red force h and the red force i.

The Court: They are resolved into two sides of a right-angled triangle, are they not?

The Witness: That is correct, your Honor, and that is what I have depicted on Defendants' Exhibit GD.

Q. (By Mr. L. E. Lyon): Now, one of those forces tends to—does one of those forces that you have drawn tend to have any effect with reference to the rotation of the scratcher collar? A. Yes, sir.

Q. Which one is that? A. The force i.

Q. Now, Mr. Doble, you have made a comparison of two different wires extending in two different directions. I will place before you Exhibit NNNN-22 and I will ask you to explain that exhibit. I believe there is one of those in the court's file.

(Testimony of William A. Doble.)

The Court: Do those forces operate the same way on the rough sides of a well?

The Witness: Yes, your Honor, because the force is [3485] applied to the finger. I believe I could illustrate that.

The Court: I don't think you need to take the time to illustrate it.

The Witness: I could illustrate it with my pencil, your Honor.

The Court: In these tests, are you applying what you deem to be the extreme resistance to the movement of these fingers or bristles or wires up and down the well?

The Witness: No, your Honor. We are trying to demonstrate the action of the wires as they operate up and down.

The Court: You are demonstrating them in action on a smooth surface?

The Witness: Yes, your Honor.

The Court: I take it that the interior of a well is anything but a smooth surface.

The Witness: Yes, your Honor. I will have to agree with that.

The Court: So, do you make any allowance for that, or is your room for accommodation in the cylinders such that you are applying the extreme impediment to the movement of the wires, to the movement of the scratcher up and down the walls of the well that would be applied under any circumstances in a real well?

The Witness: Yes, I would like to explain that

(Testimony of William A. Doble.)

in this way, your Honor, so that you will appreciate what we are trying [3486] to do:

In order that we may get a true comparison between the several different types of scratchers, we must have a standard condition to apply to all of them, and the only standard condition we could get, that we knew of, or at least that I knew of at the time, was a steel cylinder which was ground on the inside, and they were all applied to that same single cylinder, so that there couldn't be any difference in the condition.

The Court: I misconceived your purpose. You weren't attempting to simulate conditions that would be met in a well itself but were merely attempting to compare different scratchers?

The Witness: Yes, your Honor. Of course, the conditions may be somewhat different in a well, that I will agree with you, but they do give you an idea of how they would operate in a well, and we have tried some scratchers in a concrete block with a hole bored in it so they would have the roughened surface more comparable to what we would get in the well, and as far as I could observe the operation was still identical.

The Court: At any rate, your purpose here was to compare different models and types?

The Witness: Yes, correct.

The Court: Under substantially identical conditions? [3487]

The Witness: Just as nearly as we could make

(Testimony of William A. Doble.)

them, so that there could be no question but what we were giving each one a fair test to show its operating character.

Q. (By Mr. L. E. Lyon): Mr. Doble, you have just analyzed one wire of the scratcher. Now, how many wires are on the scratcher of the Jones and Berdine type of scratcher, figure 36 scratcher?

A. There are 30 wires, so the force i would be multiplied 30 times, that is, you would have 30 times the force i continuing to rotate the body of the wires of the scratcher around the casing.

The Court: Are they each operating in the same direction?

The Witness: They are each operating tangential.

The Court: I understand, but some of them might be operating clockwise and others counter-clockwise.

The Witness: No. They would be all operating in the same direction, because the effect of angulation or inclination is all the same, it is the same all the way around.

Mr. Scofield: The inclination of what?

The Witness: The wire in relation to the collar.

Mr. Scofield: What collar?

The Witness: The collar of the scratcher body.

Mr. Scofield: But if there is no inclination, if they are all radial—— [3488]

The Witness: Well, they aren't radial. We haven't any that are radial.

The Court: I was thinking of the possibility of



(Testimony of William A. Doble.)

one wire getting in a hole, in some indentation in the hole of the well that might push it in the opposite direction from the others.

The Witness: I don't see how it could do that, get in the hole and not work because it would then engage the wall and be pressing against the wall. Those wires are in motion with a distance between the surface of the scratcher body and the diameter of the well, so as you press down a wire, another has to bend because you are going to shorten the distance and the wire has to bend or it has to move the body of the scratcher around. You probably would get a combination of both.

The Court: Would you say that the rotation is in the same direction because the force of the movement is straight and even in each instance and that one wire, if it met with some obstacle different from the others, might exert less force or greater force?

The Witness: Yes.

The Court: But whatever force would be exerted toward rotation would be in the same direction.

The Witness: That is correct, your Honor, but I think that we should appreciate that the wires of the scratcher do [3489] not extend completely radial from the wall of the scratcher to the wall of the well. They are inclined both upwardly and forwardly. In other words, we have the cylinder which I have now in my hand, which is Exhibit CE-2, and the wire extends substantially in a direction like that (indicating), because it won't fit this way,



(Testimony of William A. Doble.)

because the diameter of a hole is smaller than the length of the wire and therefore it has to be pushed upwardly and in being pushed upwardly it will take the least resistance and move forwardly along the hole of the well bore. That is clearly observed in—I think we have one of the models here that shows the scratcher in the——

The Court: Yes, I have a mental picture of that.

Q. (By Mr. L. E. Lyon): Mr. Doble, what is the significance of this rotation, anyway?

A. Personally, I don't think it amounts to any significance, material significance, in this regard: If we take a scratcher such as I have in my hand, which is Defendant's Exhibit CG, we can fasten that to the casing by welding, and in plaintiff's catalogs they say that they can, their scratchers can be welded to the casing. So it is welded solid. They cannot move in relation to it. In that case you could reciprocate and mechanically rotate the scratcher at the same time and clean the wall during that rotation and reciprocation. [3490]

Now, it is simpler, however, if we mount the scratcher so it will rotate by itself on the casing. In that case, it is only necessary to reciprocate the casing up and down and due to the action of the wires on the wall, they will cause the rotation of the body portion of the scratcher to progress around the well wall.

Now, the importance of that is this: The distance between the ends of the scratchers would leave a wall of mud, and in order to remove that wall of

(Testimony of William A. Doble.)

mud, which would represent the distance between the upper ends of the wires and the well wall, you have to move it just a little bit, you don't have to move it very much, in fact it is better that you do not move it too much, because you have to progressively remove the mud or the filter cake, mud cake, as you reciprocate up and down, so it is merely a matter of convenience.

The Court: It may add something to the efficiency of the device?

The Witness: I think that is a matter of how you rotate it and how you reciprocate it. It is more convenient, I will say that, but the final result will be the same.

Q. (By Mr. L. E. Lyon): What you are trying to do, taking an expression which has heretofore been used, is to get those wires to hunt?

A. That is correct, hunt and find and get a new location [3491] like we see on the——

Q. Exhibit NNNN-27 I believe is what you are looking for.

A. I have lost it. The scribes of the lines on the wall of the well.

Q. Exhibit NNNN-27.

A. ——which is Exhibit NNNN-27 which showed the new path scribed by the wires at each reciprocation so it gradually went around and scraped off all the mud, and that is all you have, there is nothing mysterious or miraculous about it. It is just a very plain and simple expedient. It is a character-

(Testimony of William A. Doble.)

istic of all the scratchers I have ever run, and I have operated a great many of them. I have never found one that did not rotate on the casing when it was reciprocated up and down and at the reversal point.

Q. And that shifting or hunting of the wires is illustrated by the movement, the changing of the path of the wire in different strokes as shown in Exhibit NNNN-27, is that correct, Mr. Doble?

A. That is correct. [3492]

Q. Now, proceed, Mr. Doble. Let me ask you this: You had just described NNNN-19, using what you defined as a wall-cleaning guide. Did you subsequently make a cylinder tracing of that type scratcher, similar to NNNN-27 photograph that we just referred to? A. Yes, sir.

Q. Well, where is that?

A. I have before me Defendants' Exhibit NNNN-23-A and -23-B. No. Excuse me. I have got the wrong one. I have the one for the wall-cleaning guide.

Q. That was the one marked "2," was it not, Mr. Doble, corresponding with the exhibit that was numbered—"W" was the Weatherford?

A. That is correct; "W" was Weatherford.

Q. Was No. NNNN-21-B?

A. Yes, sir; that cylinder which is shown in NNNN-21-B. I don't seem to have NNNN-21-A in front of me at the moment. Maybe I have.

Q. Was there two of them?

A. Yes, I have it now.

(Testimony of William A. Doble.)

Q. You have them both? A. Yes, sir.

Q. Okay.

A. I have before me now photographs which are Defendants' Exhibits NNNN-21-A and -21-B. The cylinder [3493] illustrated in these two exhibits is a larger cylinder which had an internal diameter of  $9\frac{7}{8}$  inches, and was for the purpose of testing the large size wall-cleaning guide. And in the same way I had the large cylinder prepared which could be divided into two halves, was made of steel, was bolted together and was held in perfect alignment by taper pins. The internal diameter was ground so it would be as smooth as possible. The interior surface was coated with a black coat of show card paint, which is very soft and easily scratchable on the surface.

We mounted the wall-cleaning guide on the test machine as shown in Defendants' Exhibit NNNN—

Q. 20, I believe.

A. I can't make out what this is.

Mr. R. F. Lyon: NNNN-20.

The Witness: It looks like it may be 18.

Mr. L. E. Lyon: NNNN-20, wasn't it?

A. Well, NNNN-20 also shows it. NNNN-20. In this case it was necessary to remove the simulated casing 18 as shown in Defendants' Exhibit NNNN-19 and place on the reciprocating square rod a larger simulated casing.

Q. Or collar—oh, casing. Pardon me.

A. Casing to simulate a  $5\frac{1}{2}$ -inch casing. And

(Testimony of William A. Doble.)

on that simulated casing, in the same way, we mounted a wall-cleaning guide, as is clearly illustrated in Defendants' [3494] Exhibit NNNN-20.

Q. How did that wall-cleaning guide compare with Exhibit 104, Mr. Doble? I will place Exhibit 104 before you so you will know what I am talking about.

A. It was as close as normally any of these scratchers are made. It was very close, if not the same scratcher.

I might also point out, and it can be seen in this figure clearly, that the upper stop collar 21 is graduated around its lower periphery or calibrated so that by making a mark on the body of the scratcher and aligning that mark with the zero calibration on the upper stop ring the rotation of the collar during the reciprocation could be measured directly in inches.

I might say that was done on all of these tests.

In the same way, the scratcher which is the wall-cleaning guide of Defendants' Exhibit NNNN-20 was reciprocated in the cylinders as shown in Defendants' Exhibit NNNN-21-A and NNNN-21-B, and the lines indicated on the internal diameter or internal bore of the cylinders is scratched and the scratch lines were photographed as they appear on the two exhibits.

Q. Mr. Doble, how does what you have referred to in these tests as being the cylinders upon which these lines were scribed correspond with the pipe required in a test procedure set up in the Hall ap-

(Testimony of William A. Doble.)

plication, for example, [3495] Exhibit 69, on page 8, as you have previously read it?

A. I would say they were to the greater extent the same, but we provided a protection which they did not provide. There was no way of preventing rotation of the scratcher or casing by hand as it was shoved through the simulated well bore by hand, whereas in our test apparatus we not only provided a smooth bore which was identical for all of the scratchers, but we provided a mechanism by which the person moving the scratcher through the bore could not cause it to rotate in any way.

Q. In the application procedure it says that you mount the scratcher on a pipe. What corresponds with a pipe in your test apparatus?

A. Simulated casing 18.

Q. It says to reciprocate the pipe with the scratcher on it in a pipe of larger diameter. Which is the pipe of larger diameter in your test apparatus? A. The casing 24.

Q. You have described the only perceptible difference that you know between the two test operations, Mr. Doble; that is, that you prevented your casing from rotating and there is nothing said in their requirements about preventing the casing from rotating; is that correct?

A. That is correct, sir.

The Court: In whose requirements? [3496]

Mr. L. E. Lyon: In Mr. Hall's of the Hall application. I mean this test procedure, your Honor.

The Court: Referring to what exhibit?

(Testimony of William A. Doble.)

Mr. L. E. Lyon: 69 and Exhibit 4 and Exhibit K.

Now, Mr. Doble, have you finished—no, I don't believe you finished your exposition of Exhibits 21-A and 21-B. I notice with respect to these particular photographs that there are certain marks indicating a start up and out written on Exhibit 21-A. So that this record will be clear, will you explain what was meant by that "start"?

Mr. Scofield: Is this NNNN-21-A?

Mr. L. E. Lyon: And "up and out"? 21-A.

Mr. Scofield: Is it NNNN-21-A?

Mr. L. E. Lyon: Yes.

The Court: 21-B, is it not, Mr. Lyon?

Mr. L. E. Lyon: I may have them reversed and marked here. I will have to ask your Honor.

The Court: According to the exhibit here——

Mr. L. E. Lyon: That may be the right one.

The Court: ——that is 21-B.

Mr. L. E. Lyon: All right. I have mine marked backwards, then. I will see that the witness has his marked correctly, too.

The Witness: The exhibits I have are not marked.

Mr. L. E. Lyon: Well, I will give you one that is. That [3497] is the one that corresponds.

A. The exhibit which you have handed to me,

Mr. Lyon, has the following words written on it, and I will read from the top, from left to right. The first title, we might call it, is "dash-dot line." And there is a lead line leading from that title



(Testimony of William A. Doble.)

down to one of the lines scribed by one of the wires as it progressed down through the cylinder bore; and that particular wire sort of scribed in its passage down and made what might be called a dash line. Some of the other wires at times operated similarly, making shorter dashes, so they are more like dots. Just why the wire did that I am not too sure. However, the major portion of the wires are clearly scribed as full lines throughout their entire extent or the greater portion of their extent.

The next title is the word "start" with a lead line indicating to the point at which that particular wire, or the free end of the one wire entered the bore of the cylinder.

The next title is "upper end" and from that title there is a lead line down to the reversal point of one of the lines scribed in the cylinder.

The next title is the word "out" with a lead line to the point at which the scribed line leaves the bore of the cylinder, indicating that that is the point where the free end of the wire left the cylinder bore.

The next title is "dot-dash line" and is provided with [3498] a lead line down to a line scribed in the cylinder, a portion of which is dashed and dotted-like, similar to the dash line which I previously pointed out, excepting the dashes are shorter and there are more dots in that line.

Q. All right. You have explained Exhibit——

A. I haven't finished the bottom titles, Mr. Lyon.

Q. Oh, pardon me.



(Testimony of William A. Doble.)

A. Now reading from left to right the bottom titles on Defendants' Exhibit NNNN-21-B, I find the title "bottom" and a lead line indicating to the bottom of one of the straight lines and the loop portion extending to the right from the bottom point of that particular line.

The next title indicates "start up" I guess it is. It is my own writing. I think that the pen did not continue.

Q. Maybe the one that is in evidence you can read better.

The Witness: Is it "up"?

The Court: "Start up."

The Witness: "Start up."

The Court: I take it from the lead line it indicates that the line which reached the point you have marked "bottom" starts its upward journey from the point you have marked "start up."

The Witness: Yes, that is correct, your Honor.

And the next title is "bottom 2" and the lead line [3499] from that title leads to and indicates the bottom of the stroke of a second one of the wires of the scratcher.

Q. (By Mr. L. E. Lyon): These tests that we attended in the back yard of Mr. Wright's home, you tested some further scratchers, did you not?

A. Yes, sir.

Q. All at the same time?                      A. Yes, sir.

Q. What was the next scratcher that was tested?

Mr. Scofield: Can it be stipulated that the plaintiff was not represented at any of these tests?

(Testimony of William A. Doble.)

Mr. L. E. Lyon: The plaintiff was not there; that is correct.

A. The next test that we made was to place a 3½-inch Weatherford type of scratcher on the test machine in the same manner in which we placed the 3½-inch scratcher of the Jones type as shown in Defendants' Exhibit NNNN-15.

The Court: Which Exhibit shows the Weatherford scratcher so mounted, NNNN-17?

The Witness: I haven't found it yet, your Honor. I am looking. I don't have a photograph of it.

The Court: Is that it, 17?

The Witness: No, your Honor. That is a Nu-Coil. But it was mounted on the test structure in the same way that the Jones type of scratcher was mounted in Defendants' Exhibit [3500] NNNN-15.

Q. (By Mr. L. E. Lyon): NNNN-16, Mr. Doble, doesn't that show the scratcher that actually—no, that is a Nu-Coil. Proceed. Pardon me for interrupting you, Mr. Doble.

A. Well, as I was stating, a Weatherford scratcher which had been bought on the open market and had the wires cut to the proper length—I believe the wires on the scratcher were five-inch in length and they would not fit in a 6⅞ cylinder, so they were cut to the proper length—and that scratcher was mounted on the test machine in the same manner as the Jones type of scratcher was mounted in Defendants' Exhibit NNNN-15. In

(Testimony of William A. Doble.)

place of cylinder 24 as shown in Defendants' Exhibit NNNN-15, the same 6 $\frac{7}{8}$ -inch cylinder which was used to make the test of the Jones-type scratcher was employed. Before employing that cylinder for this test the internal bore was polished out, repainted, and was bolted together with the taper pins so as to be in perfect alignment.

The scratcher was free to rotate and free to reciprocate between the two collars and was rotated down, up, down, up and out of the cylinder bore, and the tracing formed by the free ends of the wires is clearly shown in the photograph Defendants' Exhibit NNNN-24-B.

NNNN-24-B shows the manner in which the free ends of the wires moved sidewise at the reversal points, indicating [3501] rotation of the scratcher collar during the reversal of the scratcher from a down to an upstroke or from an up to a downstroke.

And I might call attention to the similarity between the scribed marks——

I lost the one with the "J" on it, Mr. Lyon.

Mr. L. E. Lyon: If you are on "J" you are lost.

The Witness: I am lost. Well, I can compare it.

The Court: The one with the "J" on it is NNNN——

Mr. L. E. Lyon: 27.

The Court: 27.

A. Yes. I would like to call attention to the similarity between the lines scribed on NNNN-27 and NNNN-24-B.

Q. (By Mr. L. E. Lyon): Is there indicated any

(Testimony of William A. Doble.)

difference in magnitude of rotation by these scribed lines, Mr. Doble?

A. Yes, there is, I believe, a slightly greater rotation of the collar of the Weatherford scratcher; and that is in conformance with my observation. I watched the action of the wires during all of these tests and, as I remember it, the Weatherford type of scratcher did rotate a very little greater at each rotation than did the wall-cleaning guide.

The Court: You could observe that with your eyes?

The Witness: Well, we had a calibrated scale on the [3502] sleeve so we could actually measure the rotation.

Q. (By Mr. L. E. Lyon): Does that make any difference in actual operation, Mr. Doble?

A. No, sir; it does not.

Q. Why?

A. Because the wires continuously hunt, as you call it, or move around the bore so that all of the surface of the bore is scraped clean during the conditioning of the well for either producing or cementing.

Q. Mr. Doble, the particular scratcher that was used in this third test, that is, the Weatherford scratcher, is illustrated by one of the photographs, I believe Exhibit NNNN-25, is it not?

A. Yes, it is.

Q. And I hand you Exhibit NNNN-25.

A. Yes.

(Testimony of William A. Doble.)

Q. That is the particular scratcher that was used in the tests that you have last recounted?

A. Yes, sir.

The Court: That is the Weatherford scratcher?

Mr. L. E. Lyon: Yes.

The Witness: A Weatherford scratcher, your Honor, and this Exhibit NNNN-25, that is the scratcher used in the tests which I have last described.

Q. (By Mr. L. E. Lyon): Mr. Doble, you conducted further [3503] tests with other scratchers that same day at Mr. Wright's back yard. What were they?

A. We tested the Nu-Coil scratcher. And I do not see a Nu-Coil of the 3½-inch size mounted on the test machine. But in Figure NNNN-17 there is a Nu-Coil scratcher of a 5½-inch size mounted on a simulated casing in the test machine, in which case, also, the cylinder 24 has been removed and a larger diameter cylinder placed on the test machine.

Q. We tested both sizes that afternoon, didn't we, Mr. Doble?

A. Yes, sir; we did. However, I did at a later date run a test on a Nu-Coil scratcher of the 3½-inch size so as to make a cylinder which we could photograph the interior of to find out and observe the character of lines which would be scribed by that form of scratcher. And I would call attention to defendants' exhibit NNNN-23-B.

The Court: And 23-A?

The Witness: And 23-A, your Honor, yes.

(Testimony of William A. Doble.)

Q. (By Mr. L. E. Lyon): Isn't the smaller size shown in NNNN-16, Mr. Doble, and the 5½-inch size in NNNN-17? At least our list says so.

A. Well, it may be so, Mr. Lyon, but I don't have NNNN-16 before me.

Well, that is the scratcher, your Honor, that we used, but that is not mounted on the test [3504] machine.

Q. I see. It is outside of the test machine?

A. Yes, sir.

The Court: You are referring to the last exhibit, NNNN-16, is that it?

The Witness: Well, that is the scratcher that was mounted.

The Court: I am merely asking for the record so the record will show.

Mr. L. E. Lyon: Yes.

The Witness: Yes, that is the scratcher that was mounted on the test machine in the same manner that the Jones-type scratcher was mounted as shown in Figure NNNN-11.

Mr. Scofield: If your Honor please, pardon me for interrupting. But this scratcher that was marked this morning, this EJ, is the scratcher that was supposed to correspond to this NNNN-25 in your book; and it was the scratcher about which I made the statement with regard to the wires and the manner——

The Court: I don't know. Are you offering a stipulation?

Mr. Scofield: I am now just calling the court's

(Testimony of William A. Doble.)

attention to the fact that this scratcher that went in this morning as EJ is supposed to correspond to, according to Mr. Lyon's statement when the scratcher was offered, as the same as the scratcher which is shown in NNNN-25.

The Court: Is it so stipulated? [3505]

Mr. L. E. Lyon: That is what I stated, yes, your Honor.

The Court: Then you both so stipulate?

Mr. Scofield: Yes, sir.

The Witness: May I proceed?

Mr. L. E. Lyon: All right, Mr. Doble, proceed.

A. All right. I was stating that Defendants' Exhibit NNNN-25 was mounted in the test machine in the same manner as the Jones-type scratcher was mounted in Defendants' Exhibit NNNN-11.

The same cylinder which was used in the test of the Weatherford scratcher and the Jones-type, that is, the cylinder which was made in two halves, was again bolted together and held in perfect alignment with taper pins. The interior bore was polished and was recoated with show case paint. The scratcher was run down to adjacent the bottom end of the cylinder, was lifted until the wires approached the upper end of the cylinder, then it was progressed down to the bottom of the cylinder again, and finally lifted clear of the cylinder. The cylinder was taken from the machine, the two halves were separated. The two halves were immediately photographed and they appear now as Defendants' Exhibit NNNN-23-A and -23-B. And



(Testimony of William A. Doble.)

on the photographs the scribed lines, or, that is, the lines scribed by the free ends of the wires is clearly shown, especially in Defendants' [3506] Exhibit NNN-23-B. And in this case it will be observed that the sidewise path of the free ends of the wires at both the top and bottom reversal points of the stroke extend a greater distance sidewise than in either of the two demonstrations, again showing that the collar or body portions of the scratcher rotated with relation to the simulated casing.

Q. Now, Mr. Doble, on Exhibit '23-B—and I don't know whether you have a correct one in front of you or not—there are some writings at the top and bottom of the photograph, above and below the cylinder. Do those indicate your pointing out the path of two wires moving up and down in that cylinder and going in and out?

A. Yes, sir; it does.

Q. The same designation was used by you in '23-B that was used to indicate those facts as described to the court in reference to the earlier exhibit 21-B, I believe it was? Yes, 21-B, is that right?

A. Yes, sir.

Q. Was or was not the same character of rotation observed with respect to the Nu-Coil as had previously been observed with respect to the Jones, wall-cleaning guide, and Weatherford-type of scratchers?

A. Yes, sir; that is correct.

Q. Now, you made another test, I believe, that same [3507] day of another scratcher. What was



(Testimony of William A. Doble.)

that? Or was that all that was made? I guess it was.

A. No. We made one other test with an Acme type scratcher.

Q. What do you mean by an Acme-type scratcher?

A. A scratcher which I had made, which corresponded to Exhibit, Defendants' Exhibits A and A-1, I believe—yes, A and A-1, I believe, an advertisement.

Q. That is the July 7, 1941, advertisement of the Weatherford Spring Company, is that correct?

A. That is correct. [3508]

Q. (By Mr. L. E. Lyon): Now, will you describe that test that was made? First, have you here a model corresponding, or a photograph showing that so-called Acme-type scratcher, Mr. Doble?

A. Yes, sir.

Q. Which is it? A. Both.

Q. Which are they, then?

A. I would refer first to photograph, Defendants' Exhibit NNNN-5, which is a photograph of the Acme-type of scratcher which we ran in the test to make a cylinder the internal bore of which was blackened so that we could get the trace-lines of the wires.

Q. Now, was that in this test in Mr. Wright's back yard? A. No, sir. It was not.

Q. Pardon me. I wanted to complete those observations first.

Now, following the test of the steel cylinder, state

(Testimony of William A. Doble.)

whether or not we repeated the tests in a concrete cylinder, Mr. Doble.      A. Yes, sir, we did.

Q. And was that concrete cylinder illustrated by one of the exhibits here?      A. Yes, sir. [3509]

Q. Which one is that?

A. That is Defendants' Exhibit NNNN-26.

Q. Now, in Exhibit NNNN-26 there is a series of spaced horizontal lines going down into the cylinder. What caused those?

A. The travel of the free ends of the scratcher wires of several different scratchers which we operated in, through, up and out of the internal bore of the cylinder as shown in Defendants' Exhibit NNNN-26.

Q. Now, in Exhibit NNNN-26, Mr. Doble, there is what appears to me, near the bottom of that concrete cylinder, a big hole. Was that hole there when we started?      A. Yes, sir.

Q. Were the characteristics of that hole changed in any way by the many tests?      A. No, sir.

Q. Did the presence of that hole alter or change the rotation of these scratchers in any way?

A. No, sir, it did not.

And I might say that the scratchers rotated in this cylinder at the reversal points, that is, this cylinder meaning the concrete cylinder, as illustrated in Defendants' Exhibit NNNN-26, in generally the same manner as the body portions of the scratchers rotated when we used the different cylinders, either the polished cylinders or the [3510] cylinders which we had out in Mr. Wright's back

(Testimony of William A. Doble.)

yard which were not polished but the ordinary surface of the tubing.

Mr. L. E. Lyon: At this time, your Honor, I would like to offer in evidence these photographs which have been identified and which I believe start with Exhibit NNNN-11, -12, -13, -14, -15, -16, -17, -18, -19, -20, and going through NNNN-28, in evidence as such exhibits.

\* \* \*

The Court: You have offered here Exhibits NNNN-27 and NNNN-28?

Mr. L. E. Lyon: Yes, your Honor.

The Court: They are likewise received.

\* \* \*

Mr. L. E. Lyon: Now, are those all the exhibits you have referred to this afternoon, Mr. Doble, that have not been received in evidence? That is all I am trying to be [3511] certain of right now, before we proceed with the next test.

What are Exhibits NNNN and NNNN-2 to -10?

Q. Now, Mr. Doble, I would like to have you at this time just take Exhibits NNNN, NNNN-2, NNNN-3, NNNN-4, NNNN-5, NNNN-6, NNNN-7, NNNN-8, NNNN-9, and NNNN-10 and describe to the court what these photographs show and describe the scratcher that is depicted in these photographs.

The Court: Gentlemen, according to the exhibit here, the clerk has marked no such exhibit as simply NNNN. The first of that series is Exhibit NNNN-1.

Mr. L. E. Lyon: Well, I will correct my record,

(Testimony of William A. Doble.)

then, your Honor, if it is NNNN-1 instead of just the simple NNNN.

Q. I will amend that question in that regard, Mr. Doble, to include the "-1" after the simple "NNNN."

The Court: Those are all dealing with the Acme scratcher?

Mr. L. E. Lyon: Yes, your Honor.

The Court: You may proceed.

The Witness: Yes, your Honor.

I have before me Defendants' Exhibit NNNN-1, and Defendants' Exhibit NNNN-1 is a photograph illustrating a 5½-inch Acme scratcher mounted in a gauge ring. The photograph is looking directly down into the cylindrical opening of the scratcher body and into the internal bore of the scratcher ring. [3512]

Q. (By Mr. L. E. Lyon): Mr. Doble, in explaining these photographs, I think it would be advisable for you to have Exhibits A and A-1 in front of you at the same time.

Will you get those exhibits? Those are the July 7, 1941, advertisement and enlargement. Have you got them there?

The Court: Is the ring such as you have referred to illustrated by Exhibit NNNN-22?

The Witness: CD-2, I think it is.

Q. (By Mr. L. E. Lyon): No. On the photograph which would be NNNN-22?

A. Oh, let me see.

(Testimony of William A. Doble.)

Q. You better look and see what the court is looking at.           A. Yes, sir.

Mr. L. E. Lyon: No, your Honor. That is a completely different one and that has not been described yet, by the way. Yes, it was.

The Witness: No.

Q. (By Mr. L. E. Lyon): You described those two different wires, of Exhibit NNNN-22; at least I started to have you do it.

A. That is correct.

Q. Let us have your description of that photograph, Exhibit NNNN-22, right now, and it is probably because it is [3513] in evidence and has not been described. My error.

A. I have before me Defendants' Exhibit NNNN-22, which is a photograph, which illustrates a cylindrical ring or collar against the bottom edge of which are placed two scratcher wires.

Each of the scratcher wires has a short upturned end at the left-hand end of the wire, and from that short upturned end there is an arcuate portion which extends along the periphery of the cylinder and then is provided with a curve and from the curved portion extends outwardly, that is, the lower wire extends outwardly at an inclination from the radius, passing through the center of the collar or sleeve.

The upper wire also has the outturned end at the left-hand end of the wire, the arcuate portion, the curved portion, and then extends outwardly, you might say, approximating a line coextensive with

(Testimony of William A. Doble.)

the radius of the cylinder, and from a point shortly spaced from the cylinder the wire then is inclined or given a sidewise inclination until the end of the wire is adjacent the end of the lower wire.

Q. Will you refer to Exhibit CB, which I have just placed in front of you, Mr. Doble, the physical exhibit, and state what that demonstrates with respect to the photograph, NNNN-22, before you?

A. Yes. The photograph, Defendants' Exhibit NNNN-22 was taken of the ring or collar, Defendants' Exhibit CB, [3514] with the two fingers placed down at the lower edge of the collar, and otherwise is of identically the same structure and condition and appearance of the respective parts in the photograph.

Q. What do the photograph, Exhibit NNNN-22, and the model, Exhibit CB, demonstrate, Mr. Doble, if anything? [3515]

A. Defendant's Exhibit CB demonstrates that a scratcher wire—I will refer to the photograph, Exhibit NNNN-22, because I can identify the wires a little more clearly—the lower wire illustrates the manner in which the free end of the scratcher wire leaves the surface or periphery of the collar or sleeve at an inclination, or that is at an angle to an extended radius of the center of the cylinder passing through the point at which the arcuate portion of the scratcher finger last engages the surface of the cylinder.

The second wire, which is the upper of the two wires, illustrates a second scratcher wire in which

(Testimony of William A. Doble.)

a portion of that scratcher wire extends radially from the surface of the cylindrical sleeve and then extends at a sidewise inclination and the end of the wire is substantially in register with the end of the lower of the two wires.

The purpose of the illustration is to show that the two wires are in effect scratcher wires which do have sidewise inclination, the effective point in the length of the free end of the wires is the point at which first the free ends of the wires engage the wall of the well bore, and the second important point is where that wire first engages the periphery of the cylinder.

Both would operate identically in the same manner, both would have the same rotative effect as illustrated in the little diagram I drew, which is Defendant's Exhibit GD. [3516]

In other words, the same diagram of forces would apply to each of the two wires which are illustrated in the showing of Defendant's Exhibit NNNN-22 and are shown or are physically placed on the cylinder of Defendant's Exhibit CB. That further illustrates that it is not important how you bend the wire between the point it leaves the periphery of the cylinder and to the point at which the free end of the wire engages the surface of the well bore. The forces, resultant forces, or the forces resolved into their two effective forces will be identical, that is the turning force and the force tending to bend the wire inwardly.

(Testimony of William A. Doble.)

The Court: Do you offer in evidence the diagram, Exhibit GD for identification?

Mr. L. E. Lyon: Yes.

\* \* \*

The Court: Do you offer in evidence the physical exhibit, Defendant's Exhibit CB for identification?

Mr. L. E. Lyon: Yes, your Honor. [3517]

\* \* \*

The Witness: I might point out one thing in Exhibit CB which is not given in the photograph Defendant's Exhibit NNNN-22, namely, that the ends of the two wires as shown on the photograph Defendant's Exhibit NNNN-22 appear to be somewhat separated. Whereas, in the actual structure of Defendant's Exhibit CB, the ends, the free ends of the two wires are positioned substantially one directly over the other.

Q. (By Mr. L. E. Lyon): How do these two wires of Exhibit CB and Exhibit NNNN-22 correspond with the wires actually used by the defendant in the different forms of scratchers, Mr. Doble?

A. Yes, sir.

Q. I say, how do they. A. How do they?

Q. Yes.

A. They correspond in having the out-turned end which appears in photograph Defendant's Exhibit NNNN-22. They have the same arcuate section which passes around the surface of the sleeve or cylinder and the Jones-type of scratcher has the wire which is the same, generally the same, as that



(Testimony of William A. Doble.)

of the upper of the two wires, that is the free end of the wire is formed to more or less correspond with the formation of the free end of the wire in the Jones-type of scratcher as [3518] shown in figure 26 of Defendant's Exhibit X.

Q. I see.

A. The lower of the two wires as illustrated in Defendant's Exhibit NNNN-22 corresponds, that is the free end of it corresponds generally to the inclined or sidewise inclined free end of the wire as used in the Kelly-type of wall-cleaning guide.

Q. All right, Mr. Doble. Now will you go back to Exhibits NNNN-1 to NNNN-10, inclusive, where I interrupted you?

A. I have now before me Defendant's Exhibit NNNN-1 which is a photograph illustrating the Acme-type of scratcher or wall-cleaning scratcher, as illustrated in the advertisement of the Weatherford Spring Company appearing in the Oil Weekly on July 7, 1941, and is Defendant's Exhibit A.

Q. Mr. Doble, you made, or how did it happen that the scratcher as portrayed in this photograph was made, and how was it made?

A. I was in your office. You handed the advertisement of the Weatherford Spring Company, Defendant's Exhibit A, to me and you told me to go down to the Adams-Campbell Company and have two scratchers made as closely as could be made from the specifications of the advertisement and to the illustration of the Acme-type of scratcher which

(Testimony of William A. Doble.)

appears in the upper right-hand of Defendant's Exhibit A. [3519]

You further stated that you wanted the first of the two scratchers to be of a 3½-inch type, and the second of which to be of a 5½-inch type.

Q. Did I give you any other specifications such as wire length?

A. Yes, I believe that you suggested, although I am not sure at that time, that I use a 4-inch length of bristle.

Q. Where does a 4-inch length of bristle come from? Is that specified in Exhibit A?

A. Yes, sir, it is. It is specified in the right-hand column of Exhibit A in the second paragraph, as follows:

“4-inch lengths, and design permits effective reversing action without danger of bristles being broken off or damaged. Greater length bristles can be furnished on specification.”

You did give me the further specification that you wanted the outside diameter taken over the free ends of the bristles for the 3½-inch scratcher, to be 8¼ inches in diameter.

Q. And that is determined from where?

A. That is determined from the tabulation under the word “Cost” in the left-hand column of the advertisement of the Weatherford Spring Company, Defendant's Exhibit A.

Q. And that diameter is there specified, is it not?

A. Yes, sir, and for the 5½-inch scratcher I was to [3520] make you specified that the diameter

(Testimony of William A. Doble.)

should be  $10\frac{1}{4}$  inches, that is the outside diameter over the free ends of the wires.

Q. That is also found in the tabulation given in Exhibit A, is it not? A. Yes, sir.

Q. All right. Did I give you any other specifications or instructions of any kind?

A. Not that I can remember at this time, Mr. Lyon.

Q. And you went to the Adams-Campbell Company and did what?

A. I went to the Adams-Campbell Company and there talked to Mr. Stewart Kipper, gave him a copy of the advertisement, at least I placed before him a copy of the advertisement and a copy of the enlargement made of the figure which appears in the upper right-hand corner of the Weatherford Spring Company advertisement, Defendant's Exhibit A.

Q. That enlargement corresponded to Exhibit A-1, did it? A. Yes, sir.

Q. Okay.

A. I told Mr. Kipper that I would like him to make the scratcher as closely as he could to the illustration Defendant's Exhibit A-1, as well as the illustration in the upper right-hand corner of Defendant's Exhibit A, that the scratcher was to have a  $3\frac{1}{2}$ -inch diameter—was to be for a  $3\frac{1}{2}$ -inch [3521] diameter casing; that the free ends of the wires were to be  $8\frac{1}{4}$  inches in diameter; that the bristles were to be of 15 gauge steel wire as called for in

(Testimony of William A. Doble.)

the specifications of the advertisement of the Weatherford Spring Company, Exhibit A.

In the paragraph starting just above the tabulation of sizes and costs, the advertisement reads:

“The bristles are made of 15-gauge spring steel, in 3- and 4-inch lengths.”

I told him the body of the scratcher was to be of 14-gauge steel as called for under the title “Construction” as appearing in Defendant’s Exhibit A; the band was to be 2½ inches wide, and I wished him to read the specifications of the advertisement carefully and in every way to follow the teaching of the specifications in the advertisement, as well as the illustration in Exhibits A and A-1. [3522]

Mr. Kipper told me that he understood just what I wanted; and I told him if he was in trouble or any questions, to call me by telephone and I would call on him, and I believe I called the next day or so. I kept in touch with the progress of making the scratchers, and finally, about a week later, Mr. Kipper had the two scratchers made. And it was sometime after that I had the photographs made of Defendants’ Exhibit NNNN-1, which is a top view of the 5½-inch scratcher which Mr. Kipper made, mounted in a gauge ring which gauged the outside diameter taken across the free ends of the scratcher wires.

Defendants’ Exhibit NNNN-2 is a top plan view of the scratcher with the gauge ring removed. That

(Testimony of William A. Doble.)

is the 5½-inch Acme scratcher which Mr. Kipper had made.

Defendants' Exhibit NNNN-3 is a photograph of the same 5½ Acme scratcher with the lens of the camera placed as nearly as it could be directly above one side face, the outer side face or periphery of the 5½-inch scratcher, Acme-type scratcher which Mr. Stuart Kipper had made.

Defendants' Exhibit NNNN-4 is a photograph illustrating the gauge ring which is shown in Defendants' Exhibit NNNN-1, which gauge ring has been placed on top of a ruler with one face of the gauge ring resting directly over the 5-inch mark, that is, the internal diameter of the gauge ring, and the other opposite diameter of the gauge ring [3523] resting on the 15¼-inch mark on the ruler, indicating that the gauge ring was 10¼ inches in diameter.

Defendants' Exhibit NNNN-5 is a more or less three-quarter to plan view of the 3½-inch Acme-type scratcher made by Mr. Stuart Kipper in accordance with Defendants' Exhibits A and A-1.

Defendants' Exhibit NNNN-6 is a photograph illustrating the same 3½-inch Acme-type scratcher mounted in a gauge ring.

\* \* \*

A. Defendants' Exhibit NNNN-7 is a photograph illustrating the gauge ring shown in Defendants' Exhibit NNNN-6. And in Defendants' Exhibit NNNN-7 the gauge ring is mounted on top of

(Testimony of William A. Doble.)

a ruler, the right-hand side of the gauge ring is mounted so the internal bore of the gauge ring rests on the six-inch mark of the ruler. The opposite diameter of the gauge ring has the periphery thereof placed on the ruler and the point on the ruler is at the  $14\frac{1}{4}$ -inch mark, [3524] illustrating or demonstrating that the internal diameter of the gauge ring is  $8\frac{1}{4}$  inches in diameter.

Defendants' Exhibit NNNN-8 is a top plan view of the  $3\frac{1}{2}$ -inch Acme-type scratcher made by Mr. Stuart Kipper, where the lens of the camera was placed as near over the center of the scratcher as could be located.

Defendants' Exhibit NNNN-9 is a top view of the  $3\frac{1}{2}$ -inch Acme-type scratcher made by Stuart Kipper and is a top plan view in which the lens of the camera was placed directly above one side face of the periphery of the scratcher body.

Defendants' Exhibit NNNN-10 is approximately a three-quarter top view and was taken to approximate, as closely as possible, the illustration in the upper right-hand corner of Defendants' Exhibit A, or like the positioning of the scratcher in the illustration as shown in Defendants' Exhibit A-1.

That completes the series of exhibits from Defendants' Exhibit NNNN-1 through NNNN-10.

\* \* \*

Mr. L. E. Lyon: I will offer in evidence Exhibits NNNN-1 to NNNN-10 as explained by the witness.

The Court: Is there objection?

Mr. Scofield: No objection.

The Court: Received in evidence. [3526]

\* \* \*

(Testimony of William A. Doble.)

Mr. L. E. Lyon: A book that was used by Americans in Mexico City then, dealing with the Mexican patent law in [3534] the Mexican courts.

Mr. Scofield: Subject to check, your Honor, I have no objection.

The Court: Very well. It will be received in evidence as Defendants' Exhibit GH. The reporter will copy it into the record.

Mr. L. E. Lyon: I believe I said, "Article 12," all of Article 12. That is Article 12 of Chapter I. Without that the reporter would not be able to find it. The other was Chapter VI.

(The portions of Exhibit GH specified above are in words and figures as follows:)

"Article 12. It is considered that an invention is not original or was not original on a given date:

"I. If it has been previously covered by an existing Mexican patent.

"II. If it has been previously covered by some foreign patent or by a Mexican patent that has already expired.

"III. If it has previously received sufficient publicity, through a printed Mexican or foreign publication, to be put into execution.

"IV. If it has been previously exploited commercially or industrially in the country or [3535] abroad.

(Testimony of William A. Doble.)

“In the cases covered by Sections II, III and IV, it shall be considered that the invention has become public property in Mexico.

\* \* \*

## “CHAPTER VI

“Extraordinary examination of patent to determine novelty.

“Article 75. The Secretariat of National Economy shall, ex officio or at the request of any person or by a judicial order, and as regards a patent issued in Mexico which is still in force, make a special examination of the patent to ascertain its absolute novelty, in order to determine whether the patent does not come under any of the conditions specified in Article 12 of this Law.

“Article 76. The examination to determine novelty shall also be made ex officio at the request of any person or by a judicial order in the following cases:

“I. To determine whether a particular invention is patented in Mexico.

“II. To determine whether a certain object is novel or not, in accordance with Article 12, and, therefore, whether it is public property or not.

“Article 77. The special examination to [3536] determine novelty must be petitioned in writing, the application being filed in duplicate, and be accompanied by a detailed description of the invention



(Testimony of William A. Doble.)

and the necessary designs in order to make it understood, it being stressed which are the essential points to be examined. If the examination to determine the novelty of a Mexican patent should be requested, it shall suffice for the petition to state the kind and number.

“Article 78. The special examination to determine novelty referred to in the foregoing Articles shall be subject to the charges specified in the Tariff, and whenever such examination is made due to a judicial ruling, the charges shall be payable by the party who is interested in having the examination made. An examination may be made as many times as may be necessary provided elements of proof not taken into account in previous examinations are submitted or examined with the proviso as regards the effects of a declaration of lack of novelty provided for in the last part of Section III of Article 93 of this Law.

“Article 79. Proofs presented to establish the lack of novelty of an invention shall consist preferably of printed publications which clearly set forth the date on which said publication was made. [3537]

“Article 80. The printed publications made by foreign countries of their patents shall be considered as embraced within Section III of Article 12, and in order that they may be taken into account as references for the invention under examination, it shall suffice that same appear as mentioned in the description or shown in the designs, even though

(Testimony of William A. Doble.)

it may not be the principal object of the foreign patent.

“Article 81. Foreign printed publications to be found in the Archives or Library of the Secretariat of National Economy, received through official channels or direct from the Patent Offices in foreign countries, shall constitute proof without the necessity of legalization.

“Article 82. The result of the examination as to novelty shall be communicated to the petitioner in writing by the Secretariat of National Economy, the holder of the patent being also notified, even though he may not have requested the examination. The administrative resolution making known the result of the examination shall take immediate effect.

“Article 83. The resolution referred to in the preceding Article shall also mention similar patents discovered and the references or indications which are deemed pertinent. It shall be published [3538] in ‘Gazette of Industrial Property’ and, in cases where absolute priority is found, the publication shall contain a simple statement of the invention, the number of the patent and the resolution handed down. Where no prior patents are found or when same are incomplete, the design of the patent and an extract of the description shall also be published. The party concerned shall pay the cost of the electrotype required for such publication.”